Index Latinus.

Arundo

Avena

Coix

Gramen

Hordeum

Oryza

Panicum

Secale

Triticum

The Gardners Dictionary - Miller in 3 volumes "Fourth Edition Corrected and Enlarged". 1757. "Abridged from the last Folio Edition"
The above grass genera are considered.
Except Gramen they are all Linnaean genera and under them no changes. Under Gramen the following species are mentioned.

The species are:

1. Gramen loliaceum, angustiore folio & spica, C. B. P. Red Darnel-grass, or Rye-grass.

2. Gramen pratense minus seu vulgatissimum. Raii Syn. The most common Meadow grass.

3. Gramen secalinum Ger. Emac. Tall Meadow Rye-grass.

4. Gramen secalinum & secale sylvestre. Ger. Emac. Wild Rye, or Rye-grass.

5. Gramen spicatum, semine miliaceo albo. Tourn. Common Canary Grass.

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6. Gramen spica triticea, repens vulgare, caninum dictum. Raii Syn. Common Dogs-grass, or Quick-grass, or Couch-grass.

7. Gramen spicatum, durioribus & crassioribus locustis, spica brevi. Tourn. French Haver-grass.

8. Gramen paniculatum aquaticum, Phalaridis semine, folio variegato. Inst. R. H. The striped grass, or Ribband-grass.

9. Gramen dactylon esculentum. C. B. P. The Manna-grass.

S. Wale inv.t

E. Rooker sculp.

What NATURE sparing gives, or half denies,
See! healthfull INDUSTRY at large supplies.
See! in BRITANNIA'S Lap profusely pours,
While heaven-born SCIENCE swells th'increasing Stores.

Ecce! ferunt Pueri Calathis Tibi Lilia plenis. VIRG.

There are no binomials in the 7th Ed. (1759) this (1768) is the first edition with specific names

A. S. Hitchcock
$7.50

THE

GARDENERS DICTIONARY:

CONTAINING

The BEST and NEWEST METHODS

OF

CULTIVATING and IMPROVING

THE

Kitchen, Fruit, Flower Garden, and Nurſery;

As alſo for Performing the

Practical Parts of AGRICULTURE:

INCLUDING

The MANAGEMENT of VINEYARDS,

WITH THE

Methods of MAKING and PRESERVING WINE,

According to the preſent Practice of

The moſt ſkilful Vignerons in the ſeveral Wine Countries in *Europe*.

TOGETHER WITH

DIRECTIONS for PROPAGATING and IMPROVING,

From REAL PRACTICE and EXPERIENCE,

ALL SORTS OF TIMBER TREES.

THE EIGHTH EDITION,

Reviſed and Altered according to the lateſt SYSTEM of BOTANY; and
Embelliſhed with ſeveral COPPER-PLATES, which were not in ſome former Editions.

BY PHILIP MILLER, F. R. S.
Gardener to the Worſhipful Company of APOTHECARIES, at their Botanic Garden in *Chelſea*, and Member of the Botanic Academy at *Florence*.

. . . . *Digna manet divini gloria ruris.* VIRG. Georg.

LONDON,

Printed for the AUTHOR;

And Sold by JOHN and FRANCIS RIVINGTON, at No. 62, *St. Paul's Church-yard*; A MILLAR, J. WHISTON, W. STRAHAN, J. HINTON, R. BALDWIN, B. WHITE, L. HAWES and W. CLARKE and R. COLLINS, W. JOHNSTON, T. CASLON, S. CROWDER, T. LONGMAN, B. LAW, C. RIVINGTON, J. DODSLEY, W. GRIFFIN, T. CADELL, T. LOWNDES, S. BLADON, G. ROBINSON and J. ROBERTS, and T. PAYNE.

M. DCC. LXVIII.
1768

GARDENERS DICTIONARY

QK
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RB
Bst.

To the Moſt Noble

H U G H,

Duke and Earl of NORTHUMBERLAND,

EARL PERCY,

Baron WARKWORTH of Warkworth Caſtle,

Lord Lieutenant and Cuſtos Rotulorum of the Counties of
MIDDLESEX and NORTHUMBERLAND,

Of the City and Liberty of WESTMINSTER,

And of the Town and County of NEWCASTLE upon TYNE,

VICE ADMIRAL of all AMERICA,

And of the County of NORTHUMBERLAND,

One of his MAJESTY's Moſt Honourable Privy Council,

Knight of the Moſt Noble Order of the GARTER,

And Fellow of the ROYAL SOCIETY.

MAY IT PLEASE YOUR GRACE,

YOUR Grace's kind Acceptance of two former Editions of this Work, has emboldened me to lay this at Your Grace's Feet, as a public Acknowledgment of the many uſeful Obſervations and Inſtructions, which Your Grace has at ſeveral Times communicated to me for its Improvement. If I have been ſo happy as to employ them in ſuch manner, as to merit Your Grace's Approbation, I ſhall have leſs Reaſon to doubt that of the Public; ſince the moſt ſkilful Perſons in this uſeful Branch of Science, pay the higheſt Regard to Your Grace's Judgment.

The many Improvements which Your Grace is annually making ſo happily upon Your various Eſtates, ſufficiently demonſtrate Your Grace's ſuperior Judgment; but more particularly in a Country almoſt deſtitute of Timber: Where, if Your Grace continues planting, ſo ardently as for ſeveral Years paſt, the whole Face of the Country will be much altered for the better, and Your Grace's Eſtate thereby greatly improved.

That Your Grace may long live to continue theſe Improvements, and to be an Example to others, is the ſincere Wiſh of

Your GRACE'S

Moſt obedient humble Servant,

CHELSEA,
March 1, 1768.

Philip Miller.

PREFACE.

THE GARDENERS DICTIONARY having already gone through ſeveral editions, it may reaſonably be ſuppoſed, the public are well acquainted with the nature of it, which renders it leſs neceſſary to enlarge on that ſubject. The author therefore thinks himſelf obliged to return his thanks for the kind reception his work has met with.

But as there may be ſome, who may think that the republiſhing it is doing them an injury, eſpecially thoſe who have purchaſed a former edition, it may not be amiſs to make ſome apology for this.

When the firſt edition was publiſhed, gardening was then much leſs known than at preſent; and therefore, as the knowledge of the art increaſed, it became more neceſſary to enlarge on the ſubject, by adding the new improvements to the former, without which it would have been deemed imperfect: for as the author's ſituation in life rendered him capable of being well informed of the progreſs made in the art, by his great correſpondence both at home and abroad, he thought it would not be unpleaſing to communicate thoſe improvements to the public: in doing which, he has been careful not to publiſh any thing imparted to him, until he was fully ſatisfied of the facts by experiments.

Others have ſuggeſted, that printing the improvements ſeparately would give ample ſatisfaction in this point; but the author had made trial of former purchaſers ſome years paſt, by publiſhing ſeveral ſheets of new articles, by way of Supplement, for which there was ſcarce any demand; ſo that the few which were ſold, would not defray the expence of paper and printing.

As the number of plants now cultivated in England, are more than double thoſe which were here when the firſt edition of this book was publiſhed, the mentioning of them, together with their culture, could not well be avoided in a work of this nature, therefore the author hopes his care in inſerting them will not be cenſured.

From the title of this book it may ſeem to be only a Dictionary on the art of gardening, but all the branches of agriculture are included in it, in a more complete manner than can be found in any other book extant, though written wholly on the ſame ſubject. Nor are the inſtructions here given for performing the work in every part taken up haſtily, or upon ſlight experiment; but moſt of them are the reſult of more than twenty years practice in different parts of England, where the author has been permitted to ſuperintend and direct the whole: therefore he can aſſure the public he has been very cautious in recommending any thing, which he is not thoroughly convinced to be true.

It is amazing to ſee, in moſt of the books which have been publiſhed concerning huſbandry, that ſcarce any of the compilers have taken the leaſt notice of the common practice of ſowing eight times the quantity of Corn upon land that is neceſſary, to the great expence and detriment of the farmers, who are ſo wedded to their old cuſtoms, as not to be convinced of the error: for ſo obſtinate are they in this matter, that unleſs the whole ground be covered with the blades of Corn by the ſpring, they judge it not worth ſtanding, and in conſequence thereof frequently plough up their Wheat and winter Corn, to ſow the land with Barley, or other Lent Corn; whereas, if the former had been left ſtanding, it would have produced a better crop than any land can do where the blades are very thick, as the author has frequently obſerved. I have mentioned this to ſeveral farmers, but the anſwer has conſtantly been, that on rich ground a thin crop of roots will often produce a large crop of Corn, but on poor land it will not pay coſt, which is a very great abſurdity; for how is it poſſible, that bad land can ſupply proper nouriſhment to a greater number of roots than better ground? and where this practice is obſerved, ſeldom more than three or four buſhels are reaped from one ſown; whereas, where the ſame quantity is ſown upon the ſame, or a like ſoil, and has room to grow, the produce will be at leaſt ſix or ſeven buſhels. Yet I have ſeen growing upon land not very good, and uncultivated, for more than twenty years, which land was ſown with

PREFACE.

Wheat in drills, where three gallons of ſeed were allowed to an acre, a produce of nine quarters per acre; now this is no more than an eighth part of the ſeed uſually ſown by farmers, who ſeldom reap more than one-third of this produce; by which it appears plainly, that in the common method of huſbandry, there is at leaſt eight times the quantity of ſeed ſown upon the land that is neceſſary. How great a ſaving this would be in a whole country, I leave every one to judge, eſpecially in ſcarce years, when Corn is dear; and what an expence is occaſioned by the contrary practice to the farmers, who notwithſtanding ſeem unwilling to alter their ancient cuſtoms. Theſe matters are treated of under the articles AVENA, HORDEUM, SECALE, and TRITICUM.

Nor are the common farmers better managers of their paſture lands; for on them they ſeldom are at the trouble of rooting up bad weeds, which frequently over-run them; theſe are often permitted to ſcatter their ſeeds, by which the land is ſtocked with a ſupply of weeds for ſeven years or more, tho' the utmoſt care be taken afterward to deſtroy them: but tho' there are ſome farmers who may be ſuppoſed more careful in this reſpect, yet theſe leave in their head lands, and on their banks, hedge-rows, and the ſides of ditches, a ſufficient number of weeds to ſtock their fields when the ſeeds are permitted to ſcatter: beſide, theſe paſtures have rarely a ſufficient quantity of manure allowed them, eſpecially where there is much arable land; nor is the dreſſing laid on at a proper ſeaſon; the general rule with moſt of the farmers being to carry and ſpread the dung upon their paſtures, ſoon after the crop of hay is taken off the ground; and as this is done in ſummer, the heat of the ſun draws all the moiſture from it, whereby the greater part of its goodneſs is evaporated and loſt. But as theſe points are more fully treated of in the body of this work, the author deſires the reader to refer to them.

On the article of TIMBER perhaps many may ſuppoſe, the author has been too diffuſe in his inſtructions; but if thoſe who are of that opinion will only conſider, how material an article this is to the welfare of this country, he flatters himſelf they will change their ſentiments, eſpecially when they reflect upon the great waſte that has been made of it for many years paſt; as alſo that the perſons now employed by the government to cultivate and improve it, deriving their own profits from the waſte of timber, ſeem to think, that as their predeceſſors have long practiſed it, they have a right to do the ſame; this is now carried to ſo great an extravagance, that unleſs a ſpeedy ſtop be put to it, the government will be greatly diſtreſſed for their marine. For although this practice began in the Royal Foreſts, &c. yet ſeveral of the nobility and gentry, who had very great quantities of timber growing upon their eſtates, have deſtroyed a conſiderable part of theirs alſo; therefore, from a due regard for the public, the author has treated of the beſt methods for propagating and preſerving timber, which he hopes may not be diſpleaſing to the generality of his readers.

The ſeveral plants here propoſed for trial in the Britiſh dominions in America, are ſuch as there is reaſon to believe will ſucceed in thoſe parts where the experiments are deſired to be made, and confined to ſuch only, as may be of utility to the public, and real advantage to the inhabitants of thoſe countries: furthermore, theſe experiments are propoſed to be tried upon plants which will not ſucceed well in England, ſo as to render their culture practicable, and therefore will not interfere with the growth or trade of this country, and the conſumption of which is very great here, many of them being of very conſiderable uſe in our manufactures, which cannot be carried on without them; as namely the Safflower, Indigo, and ſeveral other ſorts uſed in dyeing, none of which will thrive in this country to advantage, with many medicinal drugs, which, if introduced into the iſlands of America, will certainly thrive there as well as in their native ſoils. Coffee and Chocolate grow equally well there; but the former being gathered before it is ripe, ill dried, and brought over to England in ſhips freighted with rum and ſugars, the effluvia of theſe commodities are imbibed by the Coffee, whereby it is rendered leſs valuable: as to the latter, it was formerly cultivated by the Spaniards in the iſland of Jamaica, when they were in poſſeſſion of it, ſo as to furniſh the inhabitants with a quantity ſufficient for their own conſumption; whereas the Engliſh inhabitants now reſident there, purchaſe it of the Spaniards: theſe articles therefore require the public attention, for if the above commodities may be eaſily produced in the Britiſh colonies in America, they will not only ſupply us with ſuch as are genuine, but alſo turn the balance of trade, greatly to the advantage both of Great-Britain and her colonies.

It is alſo a great neglect of the inhabitants of the ſugar iſlands in America, to commit the care of their plantations to overſeers, who at beſt go on in their uſual courſe, planting eight or ten ſugar canes in each hill, ſo that if five or ſix of them grow, they will be ſo cloſe as to ſpoil each other; for whenever theſe plants are ſtinted in their growth, they are ſoon attacked by vermin, which ſpread and multiply ſo greatly, as frequently to deſtroy the whole crop, or at leaſt very much to damage it; and this they lay upon inclement ſeaſons, calling it a blight, whereas it proceeds from their own covetous cuſtom. A gentleman of learning, who had a conſiderable eſtate in Jamaica, which was bequeathed to him upon his arrival there, was determined to make trial of the horſe-hoeing huſbandry among

among his canes. Accordingly he ſet out one acre of land in the middle of a large piece, which he cauſed to be planted with canes at five feet diſtance, putting but one to each hill; theſe grew to a very large ſize, and when ripe were cut, as alſo an acre from the beſt part of the piece in which the others were planted: each of them then were boiled ſeparately to examine their produce, which was nearly equal in the weight of ſugar; but where the plants grew ſingle, the juice was boiled with a ninth part of the fuel which the other required, and he ſold the ſugar for ſix ſhillings per hundred weight more than he could get for the former. This ſhews what advantages may be expected, if the poſſeſſors of lands were careful to make trials.

The alterations made in the catalogues of trees and plants which are added at the end of the book, have been done to prevent ſwelling the work to too great a ſize, therefore their ſpecific differences are not inſerted at full length; but as their generical titles are mentioned, and the figures to each ſpecies denote them according to their reſpective ſpecies referred to in the body of the book, the reader is deſired to turn to the ſeveral genera, where under each article, their ſpecies with their reſpective titles are inſerted at length, as alſo their culture and natural places of growth. The uſe of theſe catalogues, eſpecially to ſuch as are not acquainted with the art of gardening, but particularly to thoſe who ſet up for deſigners of gardens, may be of great ſervice; for if this part of planting were duly attended to, there would not be ſo many abſurdities committed, as are now to be found in moſt of theſe deſigns, where we often ſee ſome of the ſmalleſt growing ſhrubs placed, where the largeſt trees ſhould have been planted.

In the whole of this performance, the author has principally aimed at rendering the inſtructions given, as clear and intelligible as poſſible to the practitioners, as well as to thoſe who are leſs acquainted with the art; in every particular he has obſerved all poſſible regard to truth, not having advanced any thing as ſuch, but what he has been fully convinced of by his own experience: he hopes therefore for indulgence from the public, for any imperfections or omiſſions which may appear in the book, ſince in a work of ſo great extent, it cannot be expected to be abſolutely perfect, though it is humbly hoped there will not be found in it many faults.

Some errors of the preſs have accidentally crept in, occaſioned by the author's other neceſſary avocations, which frequently called him into the country during the time it was printing; but as moſt of theſe are corrected, and are not beſides of themſelves of great importance, he hopes the candid reader will pardon them.

The Gardeners Kalendar, inſerted in moſt of the former editions, is in this omitted, many editions of that piece having been printed in octavo; it is preſumed therefore that few perſons who have any inclination for the innocent diverſion of gardening, are without it; and as the adding any thing to this work would have ſwelled it greatly, which the author wiſhes he could have ſtill further ſhortened; and moreover it having been obſerved to him, by many of his friends, that few perſons would chuſe to turn over ſo large a volume, to find in it the articles they may have in a portable one, the omiſſion of the Kalendar was thought more adviſeable.

In the laſt edition of this work, the author adopted in a great meaſure the ſyſtem of Linnæus, which was the prevailing method of ranging plants then in uſe among botaniſts; but as many of the plants which were treated of in the Gardeners Dictionary, were not to be found in any of Linnæus's works then publiſhed, Tournefort's ſyſtem was alſo applied to take in ſuch as were not fully known to Dr. Linnæus; but ſince that time the learned profeſſor having made great additions to his works, and thoſe additions being generally conſulted for the names of plants, the author has now applied Linnæus's method entirely, except in ſuch particulars, where the Doctor not having had an opportunity of ſeeing the plants growing, they are ranged by him in wrong claſſes; as for inſtance, the Ilex or Agrifolium is ranged in his fourth claſs, with thoſe plants whoſe flowers have four ſtamina or male organs, and four ſtigmas or female parts of generation; whereas thoſe plants have male flowers upon ſome, and female upon other plants. The Laurus Linnæus has placed in his ninth claſs, with thoſe plants whoſe flowers have nine ſtamina or male organs of generation, and one female part; but theſe plants ſhould alſo be ranged in his twenty-ſecond claſs, for all the ſpecies of this genus have male and female flowers on different plants. Theſe, with ſome other alterations from Linnæus's ſyſtem, have been made in this edition, where the author has given his reaſons for ſo doing, which he hopes will be approved by the public.

Many plants are likewiſe omitted in this edition, ſeveral of them natives of England, but rarely cultivated in our gardens; as alſo many varieties accidentally ariſing from ſeeds, as are moſt of thoſe with double flowers, which, if enumerated, would have ſwelled the book to an immoderate ſize; however, moſt of theſe varieties are caſually mentioned, to inform the reader of their reſpective difference, which the author hopes will be deemed ſufficient But as the variety of fruits, as well as of eſculent

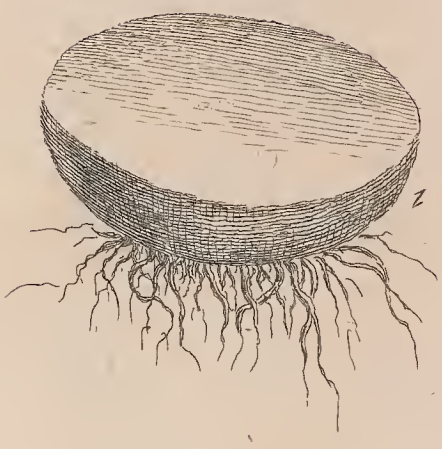
lent plants, have been moſt of them, at leaſt the fine ſorts, greatly improved by culture, they are fully treated of under their proper genera.

On this article a long ſeries of obſervations has been made by the author, who for near fifty years has applied himſelf cloſely to this ſubject; for as many former botaniſts have enumerated a great number of varieties as ſo many ſpecies, the ſtudy of botany was thereby rendered greatly perplexed; ſome of the modern writers on this ſubject, by going into the contrary extreme, have abridged the ſpecies almoſt as much. Indeed it muſt be allowed, that aſcertaining the real ſpecific difference of plants, would be of great ſervice to the ſcience of botany; but this cannot be done otherwiſe, than from many years experience in their culture, eſpecially by obſerving the varieties which ariſe from the ſame ſeeds, as alſo the difference produced by different ſoils and ſituations, which is frequently ſo great as to perplex very good judges in this matter. There are likewiſe many other varieties which have ariſen from ſeeds, ſaved from plants, and grown near others of a different ſpecies, by which means they have partaken of both; but theſe hybridine plants rarely producing any ſeeds afterward, the alteration goes no farther.

AN

The different Parts of Plants.

Plate. 1.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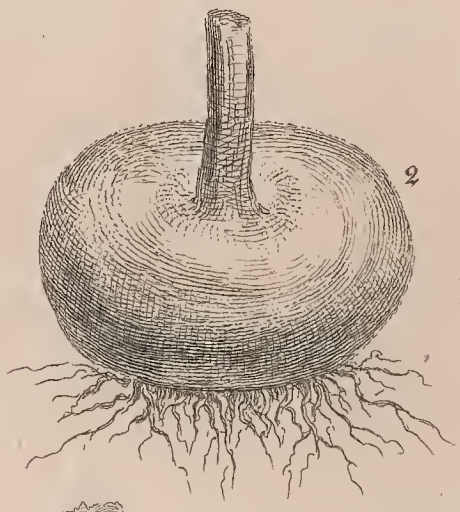
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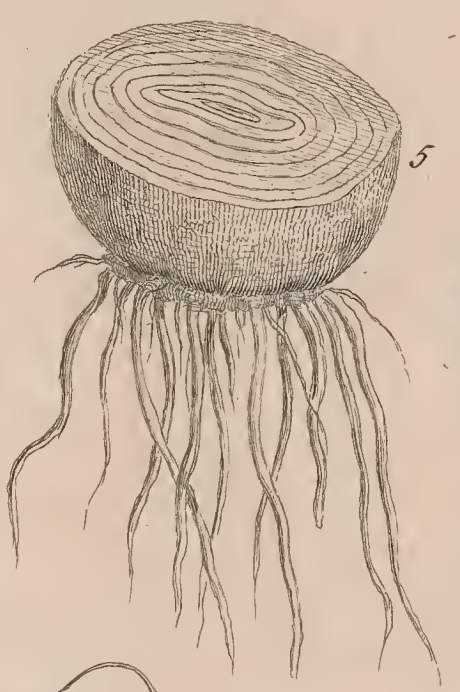
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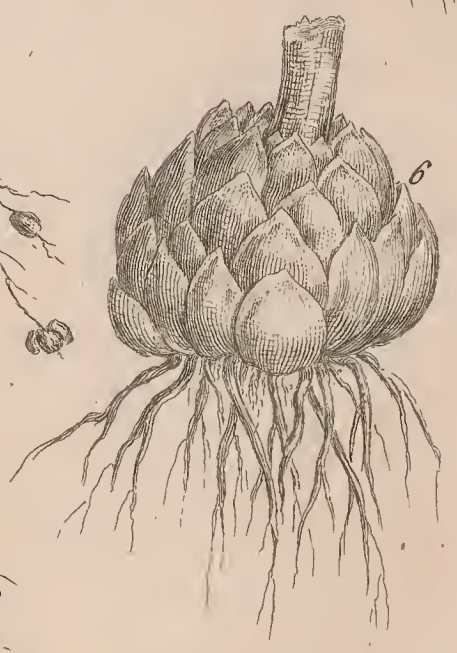
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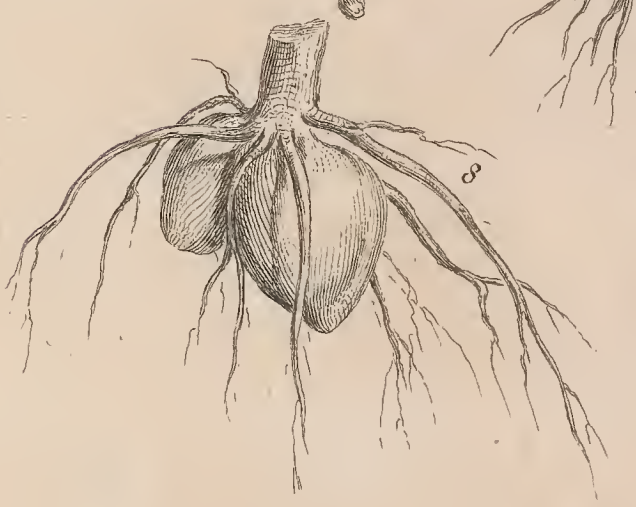
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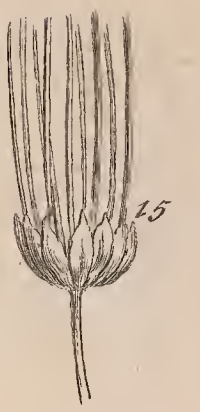
15

I. Müller. delin. et Sculp:

AN EXPLANATION OF THE TECHNICAL TERMS of BOTANY Mentioned in this WORK.

A ROOT, *Radix*, is that part of a plant, by which it naturally receives its nouriſhment. There are ſeveral ſorts of theſe, as

A fibrous Root, *Radix fibroſa*, is that which conſiſts only of fibres. See plate 1. fig. 3.

A tuberous Root, *Radix tuberoſa*, is that which conſiſts of an uniform fleſhy ſubſtance, and is of a roundiſh figure. See plate 1. fig. 1, 2. where it is cut horizontally through the middle.

A bulbous Root, *Radix bulboſa*, is that which conſiſts of ſeveral coats involving one another, as is ſhewn plate 1. fig. 4, 5. or of ſeveral ſcales lying over one another, as in plate 1. fig. 6. The firſt of theſe is called a tunicated Root, the laſt a ſquamous Root.

A granulous Root, *Radix granuloſa*, is a kind of grumous root, with ſmall knobs reſembling ſo many grains of Corn. See plate 1. fig. 7.

A teſticulated Root, *Radix teſticulata*, is a double tuberous root, conſiſting of two fleſhy knobs reſembling a pair of teſticles. See plate 1. fig. 8.

An aſphodel Root, *Radix aſphodeli*, is a kind of grumous root, whoſe fleſhy fibres ſwell into large knobs toward the bottom, reſembling the dugs of animals. See plate 1. fig. 9.

A grumous root, *Radix grumoſa*, is one which is compoſed of ſeveral fleſhy knobs ending in fibres. See plate 1. fig. 10.

A Stalk, *Caulis*, is a part of a plant, receiving the nouriſhment from the root, and diſtributing it into the other parts with which it is cloathed, not having one ſide diſtinguiſhable from the other. The ſtalk of a tree is called the trunk or ſtem, i. e. *Caudex*.

A Branch, *Ramus*, is the diviſion of a ſtalk. In trees it is generally called a bough.

A Pedicle, *Pediculus*, is that part of a ſtalk, which immediately ſuſtains a leaf, a flower, or a fruit. Dr. Linnæus has diſtinguiſhed theſe. Thoſe which ſuſtain the leaves he calls *Petiolus*, and thoſe which ſuſtain the fruit, *Pedunculus*.

A Spike, *Spica*, is a part of a ſtalk thick ſet with flowers or fruits, in ſuch a manner as to form an acute cone. See plate 1. fig. 12.

A Thyrſe, ſee *Thyrſus*, differs from a ſpike in that the flowers or fruits are ſet more looſely on it, ſo that there are ſpaces viſible between them.

A Panicle, *Panicula*, is a ſtalk diffuſed into ſeveral pedicles ſuſtaining the flowers or fruits. See Plate 1. fig. 11.

An Umbel, *Umbella*, is the extremity of a ſtalk or branch, divided into ſeveral pedicles or rays, beginning from the ſame point, and opening in ſuch a manner as to form an inverted cone. See plate 1. fig. 13. When the pedicles (*a*), into which the ſtalk is divided, are ſubdivided into others of the ſame form, upon which the flowers or fruits are diſpoſed (*b*). The firſt order (*a*) is called rays, the ſecond (*b*) Pedicles. That umbel which conſiſts of one pedicle only is called a ſimple umbel. See fig. 15. plate 1. That which is compoſed both of rays and pedicles, is called a compound umbel, as fig. 13.

A Corymbus differs from an umbel, in that the rays or pedicles are diſpoſed in ſuch a manner, as to form a ſphere. See plate 1. fig. 14.

A twining ſtalk, *caulis volubilis*, is one which twiſts about any prop or tree without the help of tendrils.

A climbing Stalk, *Caulis ſcandens*, is that which faſtens itſelf to any prop or neighbouring ſupport by the help of tendrils.

A creeping Stalk, *Caulis repens*, is that which lies on the ground, and propagates itſelf by emitting roots at the joints.

A trailing, or procumbent ſtalk, *Caulis procumbens*, is that which lies on the ground unleſs it is ſupported, but does not emit roots.

A Tendril, *Capreolus* or *Clavicula*, is a part of a ſtalk, or rather a branch from the ſide of a ſtalk, placed oppoſite to the leaf, which curls and lays hold on any adjacent body, and thereby ſupports the ſtalk, as in the Vine, &c.

A Fruit, *Fructus*, is that part of a plant which contains the ſeed with its covering. Of this there are many different forms.

A Cone, *Conus*, is a dry ſeed-veſſel, conſiſting of ſeveral ligneous parts, adhering cloſely together, and ſeparating when ripe. Of this there are ſeveral ſorts which differ in their form and texture, as in plate 2. fig. 1. is a cone of the Pineaſter, whoſe ligneous ſcales end in ſharp protuberances, which open by the warmth of the ſun in the ſpring, and eaſily emit the ſeeds. Fig. 2. plate 2. ſhews the cone of the Cedar of Libanus, whoſe ſcales are ſmooth, lying cloſe over each other, and drop off, leaving the middle column on the branches. Fig. 3. plate 2. exhibits a cone of the Fir-tree, whoſe ſcales are ſmooth, and the form oblong. Fig. 4, 5. plate 2. ſhews the cone of the Cypreſs, which is of an irregular ſpherical form, and the ſcales ſeparate, emitting the ſeeds from between them. Fig. 6. plate 2. repreſents the cone of the Pine-tree, whoſe ſcales terminate in blunt protuberances.

Dry Seed-veſſels, according to the number of cells into which they are divided, are called Unicapſular, Bicapſular, Quinquecapſular, &c. See plate 2. fig. 8, 9.

An Apple, *Pomum*, is generally underſtood to be a fleſhy fruit incloſing ſeveral hard ſeeds in the center; but it is very difficult to know what the ancients meant by the title Pomum, for this title is frequently uſed in their writings to expreſs things of different forms, therefore this epithet ſhould be only applied to thoſe fruits which are umbilicated, and contain many ſeeds. See fig. 11, 12. plate 2.

An EXPLANATION of the Technical Terms of BOTANY.

Acini is by ſome ſuppoſed to be the berries of Grapes and Currants, but is uſed in a more extenſive ſenſe by moſt of the writers on botany, who ſtile the ſmall protuberances of Mulberries, Strawberries, &c. fig. 7. plate 2. Acini.

A Cluſter, *Racemus*, is a ſtalk divided or branched into ſeveral pedicles, ſuſtaining the flowers or fruits thick ſet together in an oblong form. See fig. 12. plate 2. The firſt of theſe conditions diſtinguiſhes it from a ſpike, the laſt from a panicle.

A Pod, *Siliqua*, is a long membranaceous ſeed-veſſel, either flat or round, containing one or two rows of ſeeds. See fig. 13, 14. plate 2. Some of theſe are jointed, each of the ſwellings containing one ſeed, as is ſhewn, fig. 15. plate 2.

The Seeds of Corn and Graſs are called Grains, *Grana*. The leaf which covers the grain is called Chaff, *Gluma*, fig. 16. plate 2. *a* The Beard, *Ariſta*. *b* is a ſmall needle proceeding from the chaff. The chaff which has no beard is called naked.

A Plum, *Prunum*, is a fleſhy veſſel incloſing a hard brittle ſhell, in which is one or two ſeeds.

A Nut, *Nux*, is a ſeed covered with a hard, dry, brittle ſhell.

A Flower, *Flos*, is the organs of generation of both ſexes, adhering to a common placenta, together with their common coverings, or of either ſex ſeparately, with its proper coverings, if it have any.

Flowers are either male, female, or hermaphrodite. The male flowers have ſtamina and ſummits, but have no ovary or ſtyle. Female flowers have an ovary and ſtyle, but have no ſtamina or ſummits. Hermaphrodite flowers have both organs of generation.

The Ovary, *Ovarium*, or *Germen*, according to Linnæus, is the rudiment of the fruit. See *a*, fig. 13. plate 3. and ſo is properly the female organ of generation.

The Style, *Stylus*, is a body accompanying the ovary, either ariſing from the top of it. See *b* fig. 13. plate 3. or ſtanding as an axis in the middle with the embryos of the ſeeds round it, fig. 12. plate 3. and *c* is the ſtigma.

The Empalement, *Calyx*, is generally underſtood to mean, thoſe leſs tender leaves, which cover the other parts of the flower. See fig. 11. *a*, plate 3. Theſe, according to Mr. Ray, are of an herbaceous colour.

The Petals, *Petala*, are thoſe tender fine-coloured leaves, which are the moſt conſpicuous parts of a flower. See fig. 11. *b*, plate 3.

The Stamina or Filaments, according to Linnæus, which ſome call Chives, are thoſe ſlender threads which generally ſurround the ſtyle. See *c*, fig. 11. plate 3.

The Summits, or Apices, which Linnæus calls *Anthera*, are thoſe bodies which contain the farina fœcundans, or prolific powder, analagous to the male ſperm in animals; theſe generally terminate the ſummits. See *d*, fig. 11. plate 3.

Flowers, according to the number of their petals, are called monopetalous, dipetalous, tripetalous, tetrapetalous, &c.

A regular monopetalous flower is that in which the petal is not at all divided. See fig. 1. plate 3. or if divided, the ſegments are equal, as in fig. 2. plate 3.

An irregular monopetalous flower, is that in which the parts of the petal are unequal, as in fig. 3. plate 3. theſe Dr. Linnæus calls ringent flowers. Mr. Ray, Tournefort, and others, call all thoſe monopetalous flowers, whoſe petals are connected at their baſe, and fall off without ſeparating; but Dr. Linnæus calls them tetrapetalous or pentapetalous, when the petal is divided into ſo many parts near the bottom.

A regular polypetalous flower, is when the petals are equal in ſize, and agree in poſition, as in fig. 3. plate 3.

An irregular polypetalous flower is when the petals do not agree together in figure and poſition. See fig. 9, 10. plate 3.

A labiated, or Lip-flower, *Flos labiatus*, is an irregular monopetalous flower, divided uſually into two lips, as in fig. 6. plate 3. The upper lip *a*, is called the Creſt, *Galea*, and the under one *b*, the Beard, *Barba*. Sometimes the creſt is wanting, as in fig. 4. plate 3. and then the ſtyle and ſtamina ſupply its place. This is by ſome called an unilabiated flower.

A papilionaceous Flower, *Flos papilionaceus*, in ſome meaſure reſembles a butterfly with its wings extended. See fig. 5, 7. plate 3. It always conſiſts of theſe four parts: the ſtandard, *Vexillum*, *a*, which is a large ſegment or petal; the two Wings, *Alæ*, *b*, which compoſe the ſides; and the Keel, *Carina*, *c*, which is a concave petal or ſegment, reſembling the lower part of a boat; the keel is ſometimes of one petal or ſegment and entire; ſometimes it conſiſts of two petals or ſegments adhering pretty cloſely together.

A Floret, *Floſculos*, is a little tube expanded at the top, uſually into five ſegments. See fig. 17, 20. plate 3. and ſitting upon the embryo of a ſingle ſeed *a*; from the inner part of the floret ariſe five ſtamina *b*, which uniting together form a ſheath *c*; from the embryo of the ſeed *a*, ariſes a ſtyle *d*, which paſſes through the ſheath *c*, to which it is connected, and is terminated by a bifid ſtigma which is generally reflexed, *e*. Theſe are hermaphrodite.

A Semifloret, *Semifloſculus*, is tubulous at the baſe, and afterwards expanded in form of a tongue. See fig. 18. plate 3. Theſe generally form the rays of compound flowers, and are female.

A compound Flower, *Flos compoſitus*, is that which is compoſed either of florets, fig. 19. plate 3. or ſemiflorets, fig. 15. plate 3. or both together, fig. 16. and fig. 20.

A Diſk, *Diſcus*, is an aggregate of florets forming, as it were, a plain ſurface, as in fig. 19. plate 3. Such flowers are called diſcous flowers.

A Ray, *Radius*, is ſeveral ſemiflorets ſet round a diſk. See fig. 16. *a*, plate 3. in form of a radiant ſtar. Such flowers are called radiated diſcous flowers; thoſe which have no ſuch ray, are called naked diſcous, as fig. 19. plate 3.

A headed flower, *Flos capitatus*, is that which is compoſed of florets and ſemiflorets collected into a roundiſh head, and are all incloſed in one common ſcaly empalement, as in fig. 14. plate 3.

A whorled Flower, *Flos verticillatus*, is when the flowers are collected in whorls round the ſtalks at the baſe of the leaves, as in fig. 20. plate 3.

A Moſs Flower, which riſes on a ſlender foot-ſtalk from the plant, fig. 27. plate 3. with the head (or *Capitulum*), fig. 28. and the cover (or *Calyptra*) which opens and falls off when the ſeeds are ripe.

A Cone cut through the middle longitudinally to repreſent how the ſeeds are lodged between the ſcales. See fig. 22. plate 3.

Fig. 24. plate 3. ſhews the parts of a flower, *a* is the empalement, *b* the germen, *c* the ſtyle, *d* the ſtigma, *e* the ſtamina, *f* the ſummit, and *g* the ſame entire.

Fig. 21. plate 3. ſhews a flower with ſeveral nectariums which ſit cloſe to the germen *a*.

Fig. 25. *a* ſhews a germen, *b* a ſtyle, and *c* a ſtigma.

Fig. 26. ſhews a grain of farina fœcundans magnified.

PLATE

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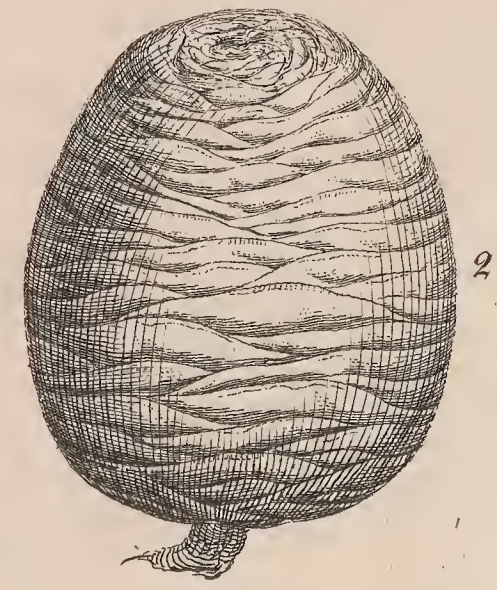
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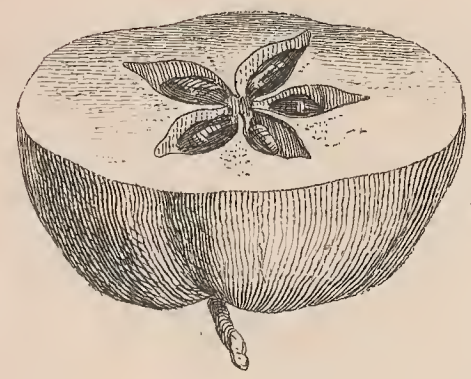
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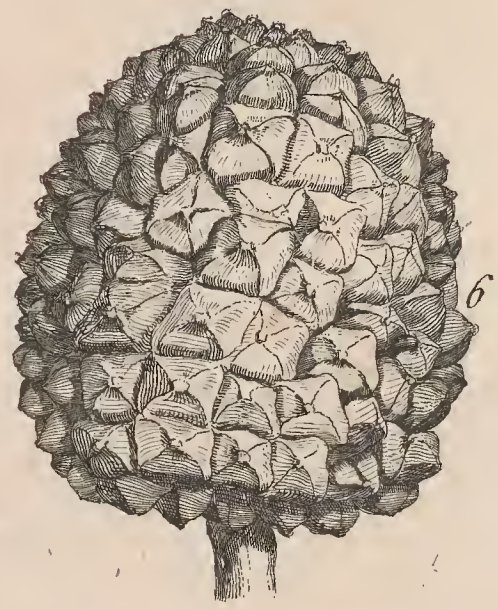
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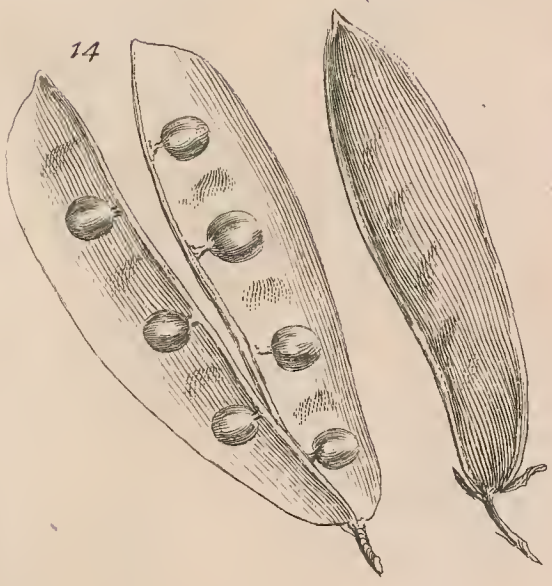
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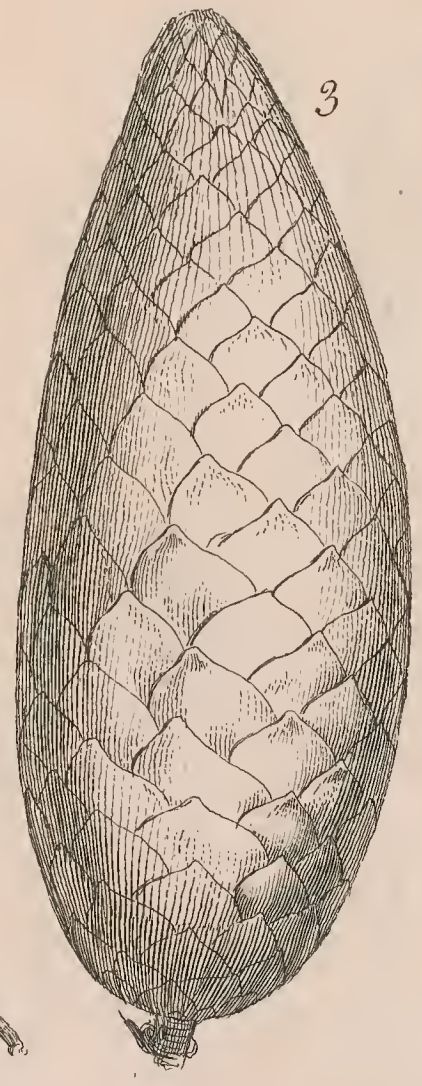
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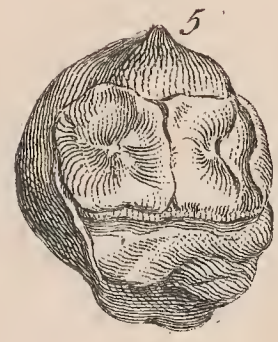
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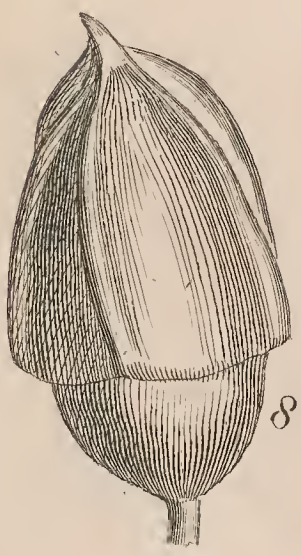
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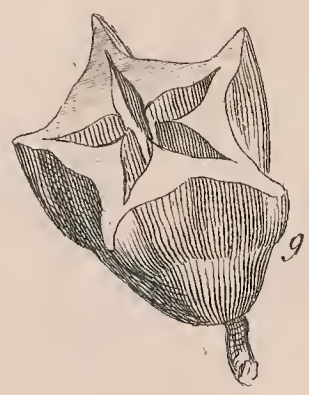
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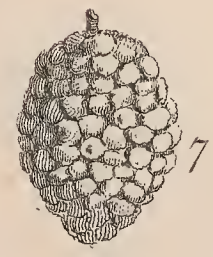
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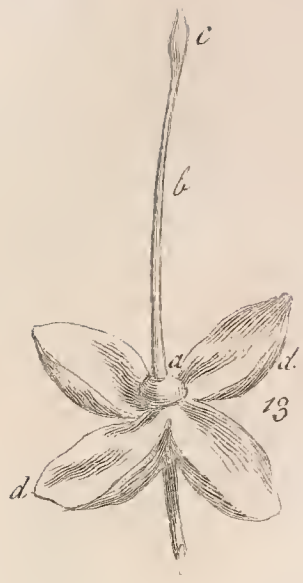
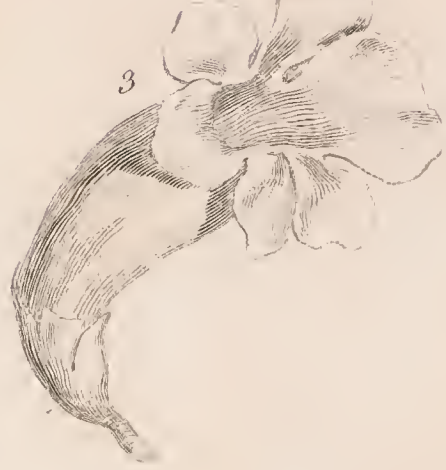
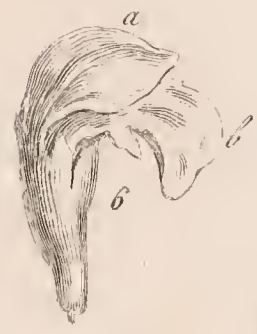
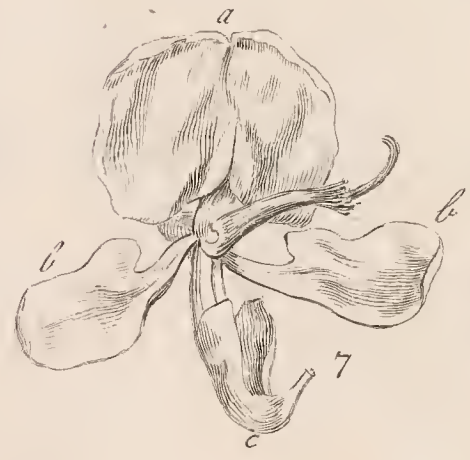
J. Miller del et Sc:

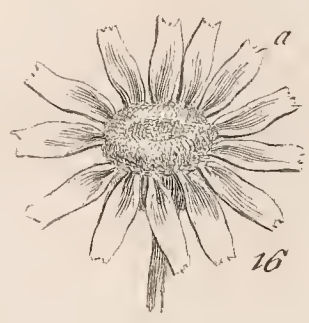
Different Structures of flowers.

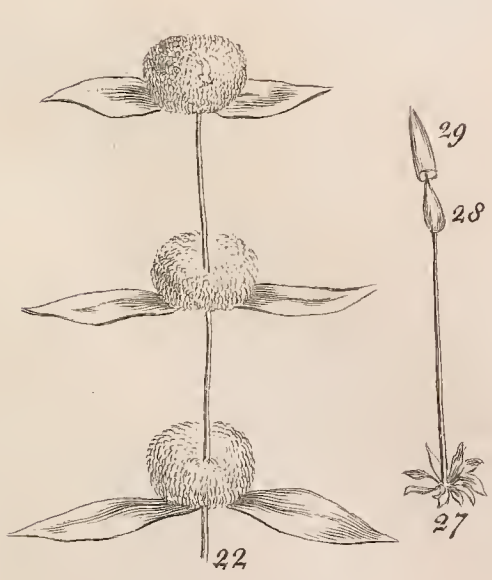


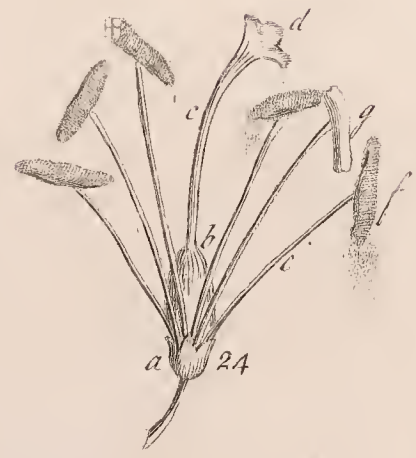












J. Miller del et Sc.

Different Structures of the Sexual parts of plants.

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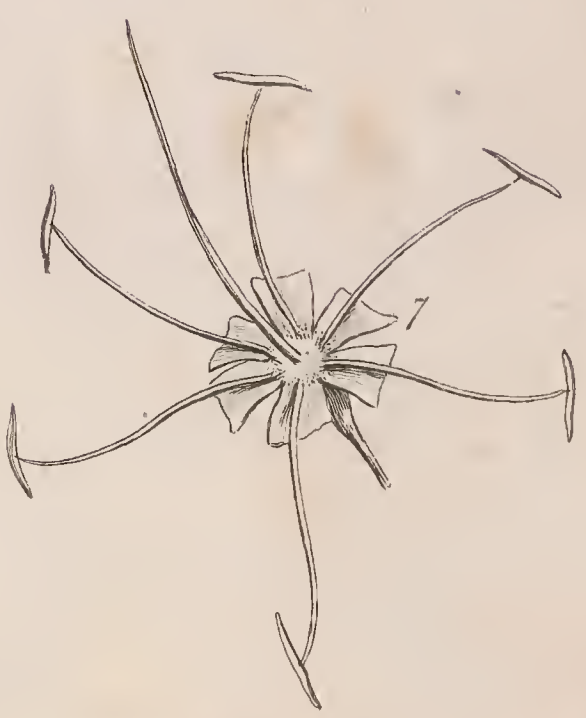
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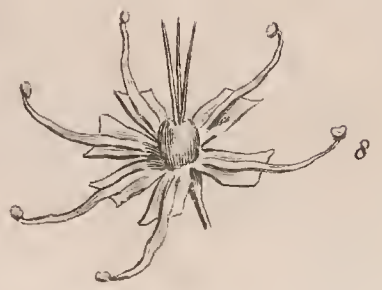
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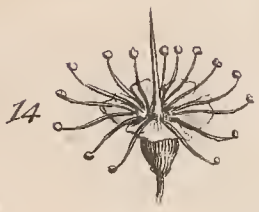
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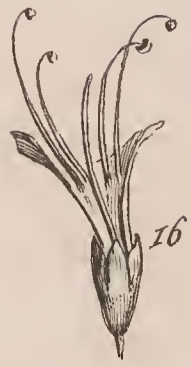
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I.Miller delin et Sculp.

PLATE IV.

Contains the figures which explain the Syſtem of Dr. Linnæus, who claſſes the plants by the number of ſtamina in their flowers.

FIG. 1. ſhews a flower with one ſtamina and one ſtyle, which he titles *Monandria Monogynia.*

Fig 2. ſhews a flower with two ſtamina and one ſtyle, which he titles *Diandria Monogynia.*

Fig. 3. ſhews a flower with three ſtamina and one ſtyle, which he titles *Triandria Monogynia.*

Fig. 4. ſhews a flower with four ſtamina and one ſtyle, which he titles *Tetrandia Monogynia.*

Fig. 5. ſhews a flower with five ſtamina and one ſtyle, whice he titles *Pentandria Monogynia.*

Fig. 6. ſhews a flower with five ſtamina and two ſtyles, which he titles *Pentandria Digynia.*

Fig. 7. ſhews a flower with ſix ſtamina and one ſtyle, which he titles *Hexandria Monogynia.*

Fig. 8. ſhews a flower with ſix ſtamina and three ſtyles, which he titles *Hexandria Trigynia.*

Fig. 9. ſhews a flower with ſeven ſtamina and one ſtyle, which he titles *Heptandria Digynia.*

Fig. 10. ſhews a flower with eight ſtamina and one ſtyle, which he titles *Octandria Digynia.*

Fig. 11. ſhews a flower with nine ſtamina and one ſtyle, which he titles *Enneandria Monogynia.*

Fig. 12. ſhews a flower with ten ſtamina and one ſtyle, which he titles *Decandria Monogynia.*

Fig. 13. ſhews a flower with twelve ſtamina and one ſtyle, which he titles *Dodecandria Monogynia.*

Fig. 14. ſhews a flower with more than twelve ſtamina, but leſs than twenty, and theſe ariſe either from the petals or the empalement, and with one ſtyle, which he titles *Icoſandria Monogynia.*

Fig. 15. ſhews a flower with a great number of ſtamina and one ſtyle, which he titles *Polyandria Monogynia.*

Fig. 16. ſhews a flower with two long, and two ſhorter ſtamina, and one ſtyle, which he titles *Didynamia.*

Fig. 17. ſhews a flower with four long and two ſhorter ſtamina, and one ſtyle, which he titles *Tetradynamia.*

Fig. 18. ſhews a flower with five ſtamina, which are connected with the ſtyle in one body, which he titles *Monadelphia Pentandria.*

Fig. 19. ſhews a flower with ten ſtamina and one ſtyle, which are joined at the baſe into one body, which he titles *Monodelphia Decandria.*

Fig. 20. ſhews a flower with many ſtamina joined in one body, with a many-pointed ſtyle, which he titles *Monadelphia Polyandria.*

Fig. 21. ſhews a flower with ſix ſtamina joined in two bodies, which he titles *Diadelphia Hexandria.*

Fig. 22. ſhews a flower with ten ſtamina, nine of which are joined together at their baſe, and the other is ſeparated, with one ſtyle. This he titles *Diadelphia Decandria.*

Fig. 23. ſhews a flower with many ſtamina, which are connected at their baſe into ſeveral cluſters or bunches, which he titles *Polyadelphia Polyandria.*

Fig. 24. ſhews a ſingle floret of a compound flower. Theſe which are hermaphrodite have five ſtamina and one ſtyle, which are connected at their baſe. This claſs he titles *Syngeneſia.*

Fig. 25. ſhews a flower whoſe ſtamina are connected with, and ſeem to proceed from, the ſtyle, which is divided into two parts. This he titles *Gynandria.*

Fig. 26. ſhews a flower of the ſixteenth claſs, which is of a different figure from thoſe before repreſented. The ſtamina of this ſtand round the column formed by the ſtyle.

Fig. 27. ſhews a floret of the compound flowers ſitting upon the germen or embryo of the ſeed, with the two reflexed ſtigmas on the top of the ſtyle.

A N

AN

EXPLANATION

OF THE

AUTHORS NAMES and WORKS

Referred to by the

ABBREVIATIONS in this WORK.

ACT. Phil. The Philoſophical Tranſactions of the Royal Society.

Act. Reg. Sc. The Memoirs of the Royal Academy of Sciences at Paris.

Aldin. A Deſcription of ſome Rare Plants which were cultivated in the Farneſian Gardens at Rome, by Tobias Aldinus. Printed at Rome 1625, fol.

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Ger.

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Hort. Amſt. The Hiſtory of Rare Plants which were in the Phyſic-Garden at Amſterdam, by Caſpar and John Commelin, in two volumes, folio. Printed at Amſterdam 1697, and 1701.

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Hort. Maur. A Catalogue of the Plants in the Garden of Signior Mauroceni, by Anthony Tita, 8vo. Printed at Padua 1713.

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Juſſ. Bern. Dr. Bernard de Juſſieu, Demonſtrator of the Plants in the Royal Garden at Paris, who has delivered to the Royal Academy of Sciences many curious Obſervations on Plants which are printed in their Memoirs.

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Lin. Gen. Plant. Charles Linnæus, F. R. S. Doctor of Phyſic, and Profeſſor of Botany at Upſal in Sweden, who has publiſhed ſeveral Editions of his Method of ranging Plants according to their Parts of Generation. The firſt at Leyden in 1737, and the ſecond in 1754, at Stockholm, 8vo.

Lin. Sp. Plant. The Species of Plants by the ſame Author in two volumes, 8vo. Printed at Stockholm in 1753, and the ſecond Edition in 1765.

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Lob. Adv. Matthias Lobel's Adverſaria Stirpium. Printed at Antwerp 1676, folio.

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Raii Hiſt. Ray's Hiſtory of Plants. Printed at London 1686, and 1704, in three volumes, folio.

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Tourn. Inſt. Inſtitutions of Botany, by Joſeph Pitton Tournefort. Printed at Paris 1716, 4to.

Tourn. Cor. A Corollary to the Inſtitutions of Botany, by J. Pitton Tournefort. Printed at Paris 1703, 4to.

Trew. Chriſt. Jacob Trew, Doctor of Phyſic, F. R. S. and of the Academy of Natural Curioſities, who has publiſhed ſeven Decades of Rare Plants, finely illuminated, in folio, at Neurenberg.

Triumf. John Baptiſt Triumfetta, his Obſervations on the Vegetation of Plants, with the Hiſtory of the Plants growing about Rome. Printed at Rome 1685, 4to.

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THE

THE

GARDENERS DICTIONARY.

A B I

ABELE-tree. See POPULUS.

ABIES; the Fir-tree.

The name is derived from *abeo*, to extend or advance. Others ſay, it is derived from *abeo*, to go away, becauſe the bark ſplits, and, as it were, falls away, or is broke off eaſily.

The CHARACTERS are, *The male flowers are diſpoſed in a looſe bunch, having no corolla, but many ſtamina, joined in form of a column at their baſe, but ſeparate above, having erect ſummits. The female flowers are collected in an oblong cone, each ſcale including two, which have no corolla, a ſmall germen with a ſingle ſtigma. Theſe are ſucceeded by membranaceous winged ſeeds.*

Dr. Linnæus, profeſſor of botany at Upſal, whoſe ſyſtem is generally followed at preſent, ranges this genus in the ninth ſection of his twenty-firſt claſs of plants, which includes ſuch as have male and female flowers, placed at diſtances on the ſame tree, whoſe ſtamina are joined together in form of a column.

To this genus he joins the Pine, Cedar, and Larch-tree, ſuppoſing them only different ſpecies of one genus; however, as there is great difference in the culture of theſe trees, we ſhall chooſe to continue the former method of arranging them under their different genera. It may not be amiſs however to obſerve, that in the former editions of Linnæus's Genera Plantarum, theſe plants were ranged under the article Abies, but in the laſt edition he has thought proper to place them under Pinus.

The SPECIES, which are at preſent to be found in the Engliſh gardens, are,

1. ABIES (*Alba*) foliis ſubtus argenteis apice emarginatis, conis erectis. *Fir-tree whoſe leaves are white on their under-ſide, and indented at their points, commonly called Silver Fir.* Abies taxi folio, fructu ſurſum ſpectante. Tourn. Inſt. R. H.
2. ABIES (*Picea*) foliis ſubulatis mucronatis lævibus bifariam verſis. *The Norway Fir, or Pitch-tree.* Abies tenuiore folio, fructu deorſum inflexo. Tourn. Inſt. R. H.
3. ABIES (*Balſamea*) foliis ſubtus argenteis apice ſubemarginatis bifariam verſis. *The Balm of Gilead Fir.* Abies taxi foliis, odore balſami Gileadenſis. Raii Hiſt. App.
4. ABIES (*Canadenſis*) foliis linearibus obtuſiuſculis ſubmembranaceis. *The Newfoundland White Spruce Fir.* Abies foliis piceæ brevioribus, conis parvis biuncialibus laxis. Rand.
5. ABIES (*Mariana*) foliis linearibus acutis, conis minimis. *The Black Spruce Fir of North America with very ſmall cones.*
6. ABIES (*Americana*) foliis linearibus obtuſiuſculis bifariam verſis conis ſubrotundis. *The Hemlock Spruce Fir.*

There is alſo another ſort of Fir, which has been of late years introduced from North America, by the title of Red Spruce Fir of Newfoundland; but ſo far as we can judge by the young trees now growing in the Engliſh gardens, it appears to be only a variety of the Black Newfoundland Spruce Fir. There was alſo many years paſt a tree of the China Fir, growing in the garden of Mr. Morgan of Weſtminſter, which is mentioned by Dr. Pluknet, but being in a bad ſituation it made little progreſs, the ſmoke of London being very hurtful to all ſorts of evergreen trees; but whether it was killed in that garden, or removed to any other, I do not know, for the ground has been built upon many years.

The firſt and ſecond ſorts of Firs are very common in gardens and plantations of evergreen trees.

The firſt grows in great plenty about Straſburgh, and other parts of Germany; from whence the turpentine is brought to England. But it is ſuppoſed, that moſt, if not all of theſe were originally planted; however, the moſt beautiful of theſe trees are now growing upon mount Olympus, from whence I have received cones, which were upwards of a foot in length. Theſe are certainly natives of the place. Dr. Tournefort, in his travels, mentions the Firs of mount Olympus as the moſt beautiful trees in the Levant.

The ſecond ſort, which is very common in the woods of Norway, is the tree that affords the white deals, and grows in the vallies where the ſoil is very deep.

There are two varieties of this ſpecies, greatly differing in the length and colour of their leaves, as alſo the ſize of their cones; one of which has been diſtinguiſhed by nurſery-gardeners, under the title of

A B I

Long Coned Corniſh Fir. The leaves of this are whiter, and much longer than the others; the cones are alſo of a greater length than thoſe of the common ſort, ſo that by the appearance of the trees, any perſon might ſuppoſe them to be a diſtinct ſpecies. But from the ſeeds which were carefully taken from this ſort, both varieties of plants have riſen, therefore they muſt be only deemed varieties.

From this tree the pitch is drawn, and hence it had the title of Picea, or Pitch-tree.

The third ſort was formerly growing in the Biſhop of London's garden at Fulham; and of late years there has been a great number of the trees raiſed from the ſeeds which have been brought from America. This ſort makes very little progreſs after eight or ten years growth; the only place in which the trees have made any figure, is at his Grace the Duke of Bedford's at Woburn-abbey in Bedfordſhire.

The fourth ſort is a native of North America, from whence the ſeeds have been brought to England, and great numbers of the plants raiſed. This is called by the inhabitants in America, the White Spruce Fir. It grows naturally on the mountains and higher lands, and arrives to a much greater ſize than moſt of the other ſorts. Thoſe in the gardens of the late Duke of Argyle, at Whitton near Hounſlow, are by much the fineſt I have ſeen: but there muſt be ſome trees of a greater age in Devonſhire, unleſs they have been deſtroyed; for in the year 1724, I received ſome branches of this tree full of cones, from a gentleman of that county, who had ſeveral of the trees then growing, which were of a conſiderable ſize.

The fifth ſort grows naturally on moiſt land, in many parts of North America, but rarely arrives to the ſize of the fourth: however, the inhabitants of America uſe the branches of both indifferently in making of Spruce-beer, from whence the trees obtained the title of Spruce-trees.

From both theſe ſpecies of Fir, exſudes a fine clear turpentine of a ſtrong ſcent, which the native Indians uſe to cure green wounds, and alſo for ſome internal diſorders; and of late years the Engliſh phyſicians in North America, have likewiſe adopted it into their practice.

The ſixth ſort is alſo a native of America, from whence the ſeeds have been brought into Europe. This tree does not thrive well in any part of England, nor in many places of America; though in ſome particular ſpots I have been informed there are very large high trees now growing. It is a native of many parts of North America.

Theſe trees are all raiſed from ſeeds taken out of their polyſpermous cones. The way to get out the ſeeds is, by expoſing the cones to a gentle fire, which will cauſe their ſquamous cells to open, and readily emit the ſeeds: but they ſhould not be expoſed to too great a heat, for the cones of all the Firs open much eaſier than thoſe of Pines, eſpecially thoſe of the Silver and Balm of Gilead Firs, which, if permitted to hang late in the autumn, fall to pieces and ſcatter their ſeeds. This ought not to be done until the time of ſowing them, which is beſt performed the latter end of March.

Theſe plants ſhould be all raiſed in a nurſery, where they may be protected from the birds, otherwiſe they will be in danger of being deſtroyed when they firſt come up. For as they bring up the huſk of the ſeed on the top of the plant, the birds, in picking off the huſk, will break off the tops of the plants, whereby a whole bed may be loſt in a few hours, if not carefully guarded from them.

The beſt time for ſowing theſe ſeeds is about the latter end of March, or the beginning of April, according as the ſeaſon is more or leſs forward, on a bed of light earth, covering the ſeeds about half an inch deep with the ſame mould. If this bed be netted over to keep off the birds, it will be a ſure method of preventing them from deſtroying the young plants at their firſt coming out of the ground; at which time they ſhould likewiſe be ſcreened from the ſun in the middle of the day, by covering the beds with mats, becauſe too much ſun frequently deſtroys the plants when they are young. In this bed the plants ſhould remain until the following ſpring, when there ſhould be a number of beds prepared in the nurſery to receive the ſeedlings. In the beginning of April they ſhould be tranſplanted into the beds, at the diſtance of ſix inches row from row, and in the rows at three inches aſunder, ſetting them in a quincunx order. In removing theſe plants, they ſhould be very carefully raiſed up with a trowel, ſo as not to break off the fibres of their roots; nor ſhould they be kept long out of the ground. During the time they are out, their roots ſhould be covered, to prevent the wind from drying their fibres; and in planting, the earth ſhould be preſſed cloſe to their roots, to prevent the air from penetrating to them. If the ſeaſon proves dry, it will be proper to water the plants every week once or twice, according to the warmth of the weather; the beds ſhould alſo be covered with mats, to ſcreen the plants from the ſun, and drying winds, until they have taken good root; after which time they will require little farther care, than to keep them clean from weeds. In theſe beds the plants may remain two years, at the end of which they ſhould be tranſplanted into an open ſpot of ground, for their roots will in that time meet quite over the beds. This ground, to which they are to be removed, ſhould be well trenched and cleared from all noxious weeds, and made level. The beginning of April, juſt before the plants begin to ſhoot, will be a good time to remove them. In taking up the plants, great care ſhould be taken not to tear off or injure their roots; nor ſhould too many of the plants be taken up at one time, but rather plant them as faſt as they are taken up, that they may be as little time out of the ground as poſſible. For the drying winds, which uſually happen at this ſeaſon, will greatly injure the roots of theſe plants, if much expoſed thereto.

The diſtance at which they ſhould be placed in the nurſery, ſhould be four feet row from row, and in the rows two feet aſunder. This diſtance may by ſome be thought too great; but if it be conſidered how much their roots ſpread in the ground, as alſo that when they are planted nearer together, it will be very difficult to take up the plants again without cutting and tearing off their roots, eſpecially if they are not all taken up clean at the ſame time: theſe conſiderations muſt have greater weight than that of the loſs of a little ground, with all who have any regard to the future welfare of the plants. In planting them, it will be adviſeable to draw a line croſs the ground, and to dig out a trench of a foot wide, into which the plants may be placed at the diſtance of two feet aſunder. Then fill the earth into the trench, covering the roots of the plants with the fineſt part of it, ſcattering it carefully between the roots; and when the whole trench is filled in, preſs the earth gently down with your feet; but by no means tread it too hard, eſpecially if the ground be ſtrong, or apt to bind too cloſe.

When the plants are thus planted, if the ſeaſon ſhould prove dry, they ought to be watered, in order to ſettle the earth to their roots; and if this be repeated three or four times, (if the ſeaſon ſhould continue dry) it will greatly promote their taking new root, and ſecure them from the injuries of the drying winds. In this nurſery the plants may remain two or three years, according to the progreſs they ſhall have made; and during this time, the ground between the plants ſhould be conſtantly kept clean from weeds, and dug between the rows every ſpring; in doing of which, care muſt be taken not to cut or injure the roots of the plants: this is all the culture they will require during their continuance in the nurſery. When they are tranſplanted into the places where they are to remain, the neceſſary care to be taken is, in taking them up, not to injure or cut off their roots, and to let them be as little time out of the ground as poſſible;

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and while they are out, to guard their roots from the drying winds. The ſureſt time for removing theſe trees is about the beginning of April; for though they may be, and often are, removed with ſucceſs at Michaelmas, yet the ſpring is the more ſure ſeaſon, eſpecially in moiſt land.

Moſt of the kinds of Firs may be removed at the height of ſix or ſeven feet; but thoſe of two feet high are much better to tranſplant, and will in a few years gain the aſcendant of taller trees: I would not, therefore, adviſe the tranſplanting of theſe trees when they are much above two feet high, eſpecially if they have ſtood in the nurſery unremoved. For then their roots will have extended themſelves to a diſtance, which muſt be cut in taking them out of the ground; and where great amputation is uſed either to the roots or branches of theſe trees, the quantity of turpentine which commonly iſſues from theſe wounds, will greatly weaken the trees. There is another advantage alſo in planting them when ſmall, which is that of not requiring ſtaking to ſecure them from being blown down by ſtrong winds, which in tall trees is a great trouble or expence. And whoever will give themſelves the trouble to obſerve, how much trees of two feet high exceed in growth thoſe which are removed at a much greater height, will, I am ſure, be convinced of the truth of what is here ſaid.

The common Spruce Fir is what affords the white deals. The trees grow in the deep ſtrong ſoils of Norway and Denmark; but will grow likewiſe in almoſt any ſoil or ſituation in England, provided it be not within the reach of the ſmoke of great cities, which is very injurious to all theſe ſorts of trees; nor do they thrive near ſo well in dunged land, as in freſh uncultivated ſoils. The diſrepute theſe trees have been under for ſome years paſt, has been occaſioned by their being planted too cloſe together, or too near other trees, whereby the air has been excluded from their branches, which has occaſioned moſt of their under branches to decay; ſo that when viewed from the ground under their branches, they have a greater appearance of dead than living trees. But where they have been allowed a good diſtance, and planted in a ſtrong freſh ſoil, they have had their branches quite feathered within ſix or eight feet of the ground, and that too in trees upward of ſixty feet high; therefore ſhould not be planted nearer than twelve feet apart, nor ſhould they be ſo near, where the plantation is more than three rows deep. In this caſe, eighteen or twenty feet aſunder will be full near enough, eſpecially where the trees are deſigned to have their branches feathered near the ground, in which one of the beauties of theſe trees conſiſts.

The Silver Fir requires a ſtronger land than the Spruce, for in dry ground they ſeldom make any great progreſs; and many times, even after they have arrived to a conſiderable ſize, are deſtroyed by very dry ſeaſons, where the ſoil is ſhallow, or too dry. But when they are planted in a proper ſoil, they grow to a very large ſize, and are extremely beautiful, having the under ſide of their leaves white, and the upper ſide of a dark green colour.

This ſort of Fir, however, is frequently injured by froſts, when they happen late in the ſpring, eſpecially while the plants are young. For when theſe are planted in a warm ſituation, they are apt to ſhoot pretty early, and if any ſharp froſts happen after they have puſhed, the young ſhoots are killed; ſo that they loſe a year's growth, and are rendered ſo very unſightly, that many times they have been pulled up and thrown away. In cold ſituations, however, where they do not begin to ſhoot ſo early, they are not ſubject to this diſaſter; and, in many ſuch places, theſe trees grow to a large ſize, and have their beauty. I have ſometimes ſeen ſome fine trees of this ſort of Fir, which grew upon natural bogs, where, by extending their roots, they had drained the ground to a conſiderable diſtance round them. There were ſome trees of this kind lately growing in England, upwards of ninety feet high.

The method of raiſing the other ſorts of Firs.

About the latter end of March, or the beginning of April (according to the forwardneſs of the ſeaſon, by which every perſon muſt be guided) prepare a very moderate bed, in length proportional to the quantity of ſeeds to be ſown, and where there are frames which can be ſpared for this purpoſe, theſe may be placed upon the bed; but where theſe are wanting, the bed ſhould be cradled over with hoops, that they may be covered with mats or canvaſs; then plunge the bed full of ſmall pots, ſuch as are commonly ſold about London for four ſhillings and two pence per hundred. Theſe pots ſhould be filled with light undunged earth, and the interſtices between the pots may be filled up with any other earth which is neareſt to the place; then ſow the ſeeds in theſe pots, covering them about half an inch with the ſame light earth. In drying winds the bed ſhould be covered, to prevent the earth from drying too faſt, which would prove hurtful to the ſeeds; nor ſhould the ſeeds have too much wet, which would be equally injurious to them: therefore the earth ſhould be but ſeldom watered, and it muſt never be given in great quantities. When there is any appearance of froſt at night, the bed ſhould alſo be covered. With this management the plants will appear in five or ſix weeks time, when they muſt be carefully guarded from birds, as was before directed for the common ſorts, and alſo ſcreened from the ſun in the middle of the day; but they muſt now have freſh air admitted to them at all times when the weather will permit. They may alſo be allowed to receive any gentle ſhowers of rain, but they ſhould not have too great plenty of moiſture, which will frequently rot the young plants, and cauſe them to drop. Upon the judicious care of this, depends the whole ſucceſs; for I have frequently ſeen great numbers of theſe plants deſtroyed in one day, by being either too much expoſed to the ſun, or from having too much wet.

It may, perhaps, ſeem ſtrange to many, that I ſhould direct the ſowing the ſeeds of theſe trees which are ſo very hardy upon a hot-bed; but from many trials I have always found they have ſucceeded much better this way than any other, for the gentle warmth of the bed will not only cauſe the ſeeds to vegetate much ſooner than they would naturally do in the cold ground, but the plants will alſo riſe much ſtronger, and, conſequently, be in leſs danger of rotting in their ſhanks. And as the warmth of the bed is only to bring up the plants, ſo there ſhould be but little dung employed in making it; for after the plants are up, they muſt be inured to the open air, and treated as hardily as the common ſorts.

There may be others, perhaps, who will object to the directions given for ſowing the ſeeds in ſuch ſmall pots, becauſe, where there is any quantity of the ſeeds, it is uſual to ſow them in boxes, or large pots: but I can from many years experience aver, that moſt ſorts of ſeeds ſucceed better when ſown in ſmall pots, than in boxes, or larger ones, and therefore recommend this practice.

As the ſeeds of the Hemlock Fir will frequently remain in the ground four or five months, the pots, in which they are ſown, ſhould not be diſturbed, if the plants come not up ſo ſoon as may be expected; for unleſs upon ſtirring the ground, the ſeeds are found to be decayed, there may be hopes of their growing the ſecond ſpring, for I have ſometimes had the ſeeds remain a whole year in the ground, and afterwards come up very well: this caution, therefore, is given to prevent the pots from being too haſtily turned out.

The plants of theſe ſorts of Fir muſt be afterwards treated in the ſame way as the common ſorts, with this difference only, that they ought to be tranſplanted into a more ſhady ſituation and moiſter ſoil. For while the plants are young, they will not thrive if they are much expoſed to the ſun, or in a dry ſoil; but when

when they have obtained ſtrength, they will bear the open ſun very well, and in a moiſt ſoil will make great progreſs; whereas in dry ground they frequently ſtint, and produce plenty of male flowers and cones, by the time they get to the height of four or five feet. When the branches of theſe rees are cut off to trim them up to have ſtems, it ſhould be done gradually, never cutting more than one tier of branches in one year; for if too many wounds are made at the ſame time on theſe reſinous trees, the turpentine will iſſue out in ſuch quantities as to weaken and check their growth. The beſt time for pruning theſe trees is in September, at which time they abound not ſo much in turpentine as in the ſpring, and, conſequently, do not bleed much. What flows out at that ſeaſon, is ſeldom more than is neceſſary for covering the wounds, to prevent the wet and cold of the ſucceeding winter from penetrating the wounded parts. Theſe branches ſhould be cut cloſe to the trunk.

ABROTANUM, or Southernwood. See ARTEMISIA.

ABROTANUM FŒMINA. See SANTOLINA.

ABRUS. See GLYCINE.

ABSINTHIUM, Wormwood. See ARTEMISIA.

ABUTILON. See SIDA.

ACACIA, Egyptian Thorn, or Binding Bean Tree. See MIMOSA.

ACALYPHA, three ſeeded Mercury. This genus of plants is by Dr. Linnæus ranged in the ninth ſection of his twenty-firſt claſs, which comprehends ſuch plants as have their male flowers furniſhed with one ſet of united ſtamina.

The CHARACTERS are,

The male flowers are in cluſters ſituated above the female in the ſame plant. Theſe have no corolla: they have a four leaved empalement with ſeveral ſhort ſtamina, which are joined at their baſe, having roundiſh ſummits. The female flowers have a large empalement, a three leaved cup which is permanent: they have no corolla. A roundiſh germen with three branching ſtyles, and a long ſtigma. The cup afterwards turns to a capſule with three cells, each containing one roundiſh ſeed.

The SPECIES are,

1. ACALYPHA (*Virginica*) involucris fœmineis cordatis inciſis, foliis ovato-lanceolatis petiolo longioribus. Hort. Upſal. 290. i. e. *Three ſeeded Mercury, whoſe female flowers have a heart-ſhaped empalement, and oval ſpear-ſhaped leaves, with long foot-ſtalks.* Mercurialis tricoccos hermaphroditica.
2. ACALYPHA (*Virgata*) ſpicis fœmineis involucris cordatis ſerratis; maſculis aphyllis diſtinctis foliis lanceolato-ovatis. Amœn. Acad. 5. p. 410. *Three ſeeded Mercury, whoſe female flowers have an indented heart-ſhaped empalement, diſtinct from the male.*
3. ACALYPHA (*Indica*) involucris fœmineis cordatis ſubcrenatis, foliis ovatis petiolo brevioribus. Flor. Zeyl. 341. *Mercury, whoſe female flowers have heart-ſhaped crenated empalements and oval leaves.*

The firſt ſort grows naturally in Virginia, and ſeveral other parts of North America, from whence I received the ſeeds. It is an annual plant, which ſeldom grows more than a foot high, ſending out ſeveral ſide branches towards the bottom. The leaves are very like thoſe of the broad leaved Pellitory of the wall, and are placed alternately, having long foot-ſtalks, from the alæ, or wings of the leaf. The flowers are produced in ſmall cluſters, the male always being above the female. Theſe make but a poor appearance, and reſemble thoſe of the Pellitory ſo much, that at a ſmall diſtance, any perſon might ſuppoſe them to be the ſame, till convinced by a nearer inſpection.

If the ſeeds of this ſort are permitted to ſcatter, the plants will come up in the ſpring, better than if ſown by hand; for if they are not put into the ground in Autumn, they rarely grow the firſt year. All the culture this plant requires, is to keep it clear from weeds, and let it remain where it was ſown, for it doth not bear removing well. It flowers in Auguſt, and the ſeeds ripen in October.

The ſecond ſort is a native of the warmeſt countries. I received the ſeeds of this from Jamaica, where it grows in great plenty. This is alſo an annual plant, which in England ſeldom exceeds the former ſort in its ſtature. The leaves of this greatly reſemble thoſe of the annual Nettle, and ſting full as much when touched. It is too tender to thrive in the open air in England, therefore the ſeeds ſhould be ſown in pots, plunged into a hot-bed; and if the plants do not come up the firſt year, (which often happens) the pots ſhould be put in ſhelter in winter, and the following ſpring plunged again into a hot-bed, which will bring up the plants. Theſe muſt be tranſplanted into pots, and brought forward in hot-beds, otherwiſe they will not produce ſeeds ripe in England.

Theſe plants have no beauty to recommend them, but as they are preſerved in ſeveral gardens for the ſake of variety, I thought it neceſſary to inſert them here.

ACANACEOUS plants [ſo called from ἄκανθα, *Gr.* a thorn or prickle] are ſuch as have prickly heads.

ACANTHUS [ἄκανθος, ſo called, as ſome ſay, from ἄκανθα, a thorn.] It is alſo called Branca Urſina, or Bear's-breech.

The CHARACTERS of this plant are,

The empalement is compoſed of three pair of unequal leaves. The flower is unequal, of one leaf, with a ſhort tube, the beard, or lower lip, being large, plain, and erect. It has no upper lip. The ſtamina and ſtyle occupy the place of it. Theſe are arched and ſtretched out beyond the empalement. There are two long and two ſhorter ſtamina, which cloſely coaleſce to the ſtyle, which is ſituated upon a roundiſh germen, and afterwards become an oval capſule, having two cells, each containing one fleſhy ſmooth oblong ſeed.

This genus of plants is by Dr. Linnæus ranged in the ſecond ſection of his fourteenth claſs, intitled Didynamia Angioſpermia, from the flowers having two long, and two ſhorter ſtamina, and the ſeeds growing in a cover.

The SPECIES are,

1. ACANTHUS (*Mollis*) foliis ſinuatis inermibus. Hort. Cliff. *The common, or ſmooth garden Bear's-breech.* Acanthus Sativus vel Mollis Virgilii. C. B.
2. ACANTHUS (*Niger*) foliis ſinuatis inermibus glabris lucidè virens; *Portugal Bear's-breech, with ſmooth ſinuated leaves of a lucid green colour.* Acanthus Luſitanicus ampliſſimo folio lucido. Juſſ.
3. ACANTHUS (*Diſcolor*) foliis lanceolatis integerrimis margine ſpinoſis. Gron. Ov. *Middle Bear's-breech, with intire leaves, having ſpines on their borders.*
4. ACANTHUS (*Spinoſus*) foliis pinnatifidis ſpinoſis. Hort. Cliff. 326. *Prickly Bear's-breech.* Acanthus aculeatus. C. B. P. 383.
5. ACANTHUS (*Ilicifolius*) foliis repandis dentato-ſpinoſis, caule fruticoſo aculeato. Oſb. it. 92. *Shrubby Bear's-breech, with prickly leaves like Holly.* Acanthus malabarius, agrifolii folio. Pet. ſic. 10.

The firſt ſort is what is uſed in medicine, and is ſuppoſed to be the Mollis Acanthus of Virgil. The leaves of this plant are cut upon the capitals of Corinthian pillars.

Various have been the diſputes among the learned about the plant, which is mentioned under this title by Virgil, who have given ſo many different characters to it, that no plant yet known will agree with them all. Many, therefore, have been of opinion, that there were two ſorts of the Acanthus, one of them a tree, and the other an herb. The tree is ſuppoſed to be the Egyptian Acacia, and the plant the firſt ſort here mentioned; but there yet remains a difficulty with regard to ſome of the epithets applied to that plant, as firſt, where it is mentioned to be an evergreen berry-bearing plant. *Baccas ſemper frondentis Acanthi.* As to its being evergreen, that may be eaſily conceived of our Acanthus, in the warm climate of Italy; for in England, where the plants grow in a warm ſituation, they are ſeldom deſtitute of leaves more than ſix weeks, unleſs the winter proves very ſevere. We may alſo ſuppoſe, that the fleſhy oval ſeed-veſſels of this plant might be taken for berries. But then with regard to its being a twining plant, *flexi*

tacuiſſem

tacuiſſem vimen acanthi, it will by no means agree with this, or the Egyptian Acacia. However, as the botaniſts in general have agreed that the plant here mentioned is the Acanthus of Virgil, and there being ſeveral entire columns of the Corinthian order yet remaining at Rome, upon whoſe capitals the leaves of this plant are ſo well expreſſed, as not to admit of any doubt of their being deſigned from our Acanthus, and theſe columns being as antient as the time of Vitruvius, there can be no doubt that this is the plant from whoſe leaves Callimachus, a famous architect, compoſed the capitals of the Corinthian pillars.

The ſecond ſort was diſcovered in Portugal by Dr. Bernard de Juſſieu, demonſtrator of plants in the royal garden at Paris, from whom I received the ſeeds in 1725, which ſucceeded in the Chelſea garden, and frequently perfects ſeeds there; which being ſown, conſtantly produce the ſame plants as the parent, and therefore muſt be a diſtinct ſpecies.

The third ſort is at preſent very rare in England; it grows naturally in the eaſt, and is by Dr. Linnæus ſuppoſed to be the Acanthus of Dioſcorides, but with what certainty I cannot determine. This ſort is not ſo hardy as either of the two former, ſo requires ſhelter in the winter; therefore the plants while young, ſhould be kept in pots, and placed under a common frame during the winter ſeaſon; where they may enjoy the open air in mild weather, but ſcreened from hard froſts. When the plants have acquired ſtrength, ſome of them may be turned out of the pots, and planted in a border near a ſouth wall, and in hard froſts if they are covered with mats or hand-glaſſes, they may be ſecured, and theſe plants will more certainly flower than thoſe in the pots.

The leaves of the fourth ſort are deeply jagged, in very regular order, and each ſegment is terminated with a ſharp ſpine, as are alſo the foot-ſtalks of the leaves, and the empalement of the flower, which renders it troubleſome to handle either of them.

The fifth ſort grows naturally in both Indies; I received it from the Spaniſh Weſt-Indies. There is a good figure of this plant in Pluknet's Phytographia, tab. 261, fig. 4. under the following title, Frutex Indicus ſpinoſus, foliis Agrifolii ſiliqua geminata brevi. This is a ſhrub which riſes about four feet high, is divided into many branches, garniſhed with leaves, very like thoſe of the common Holly, both in ſize and ſhape, and are armed with ſpines in the ſame manner; the flowers come out ſingly, which are white, and ſhaped like thoſe of the common Acanthus, but ſmaller. After the flower is paſt, the germen becomes an oval bicapſular veſſel, having one oblong ſeed in each cell. This ſhrub is evergreen, but is too tender to thrive out of a ſtove in England, and can only be propagated by ſeeds, which do not ripen in Europe. The other ſorts are laſting plants, which may be propagated either by ſeeds, or parting of their roots; if by the former method, the ſeeds ſhould be ſown in a light dry ſoil, towards the end of March: if the ſeaſon proves favourable, the plants will appear in May, and all the culture they require, is to keep them clean from weeds, and where the plants are too cloſe, to thin them, ſo as to leave them about ſix inches aſunder, which will be room enough for them to grow till autumn, when they ſhould be tranſplanted where they are deſigned to remain. The firſt, ſecond, and third ſorts, being tenderer than the others, ought to be planted in a warm border near a wall; and as theſe do not multiply ſo faſt by their roots, ſo they do not require more room than three feet; but the fourth ſort ſpreads its roots to a great diſtance, therefore muſt have more than twice that room. This being hardy in reſpect to cold, may be planted between ſhrubs, to fill up vacant ſpaces, where it will thrive faſt enough, provided the ground be light, and not over wet, and when the plants are in flower, will make an agreeable variety. If this ſort is propagated by its root, it may be performed either in ſpring or autumn; but the three firſt muſt only be removed in the ſpring, for if

they are tranſplanted in the autumn, and the following winter prove cold, they will be in danger of being deſtroyed.

Theſe plants take root very deep in the ground, ſo that when they are planted in wet ground, their roots will rot in winter: I have frequently traced them more than four feet, therefore they ſhould not be removed after they have been growing long in a place, but the ſide ſhoots may be annually taken off, eſpecially from the creeping kinds, otherwiſe they will ſpread ſo far, as to over-bear any of their neighbouring plants or ſhrubs. When the ſorts with creeping roots are once eſtabliſhed in a garden, they are with difficulty eradicated, for every root which may happen to be left, will ſhoot again, ſo as to become troubleſome.

ACARNA. See CNICUS.

ACAULIS, or ACAULOS [of *a neg.* and *caulis* a ſtalk or ſtem; i. e. without ſtalk;] a plant is ſaid to be *acaulis*, or without ſtalk, whoſe flower reſts on the ground, having no viſible ſtalk.

ACER [ſo called according to Voſſius, from *acris*, L. becauſe of the very great hardneſs of its wood.] The Maple-tree.

The CHARACTERS of this tree are,

The empalement of the flower is monopetalus, coloured, and cut into five ſharp ſegments at the brim, and is permanent. The corolla is compoſed of five oval petals which ſpread open, and are larger than the empalement. It hath eight ſhort awl-ſhaped ſtamina crowned by ſimple ſummits. The germen is compreſſed, and immerſed in the large perforated receptacle. The ſtyle is ſlender. It hath two acuminated ſtigma which are reflexed. The capſules are two, joined at their baſe; they are roundiſh, each being terminated by a large wing, incloſing one roundiſh ſeed in each.

This is ranged by Dr. Linnæus, in his twenty-third claſs of plants, entitled Polygamia Moncœcia.

The SPECIES are,

1. ACER (*Pſeudo Platanus*) foliis quinquelobis inæqualiter ſerratis floribus racemoſis. Lin. Sp. Plant. 1054. *The greater Maple, falſely called Platanus.* Acer majus multis falſo platanus. J. B. The Sycamore-tree.
2. ACER (*Campeſtre*) foliis lobatis obtuſis emarginatis. Lin. Sp. Plant. 1055. *The ſmall, or common Maple.* Acer campeſtre & minus. C. B. P. 431. By the French, *Petit erable des bois.*
3. ACER (*Negundo*) foliis compoſitis floribus racemoſis. Hort 144. *The Virginia Aſh-leaved Maple.* Acer maximum foliis trifidis vel quinquefidis Virginianum. Pluk. Phyt.
4. ACER (*Platanoides*) foliis quinquelobis acuminatis acutè dentatis glabris floribus corymboſis. Lin. Flor. Suec. 303. *The Norway Maple with Plane-tree leaves.* Acer platanoides. Munt. Phyt.
5. ACER (*Rubrum*) foliis quinquelobis ſubdentatis ſubtus glaucis pedunculis ſimpliciſſimis aggregatis. Lin. Sp. Plant. 1055. *The ſcarlet flowering Maple of Virginia.* Acer Virginianum folio majore ſubtus argenteo ſupra viridi ſplendente. Pluk. Alm. 7.
6. ACER (*Saccharinum*) foliis quinquepartito-palmatis acuminato dentatis. Lin. Sp. Plant 1055. *The American Sugar Maple.*
7. ACER (*Penſylvanicum*) foliis trilobis acuminatis ſerrulatis floribus racemoſis. Lin. Sp. Plant. 1055. *The Mountain Maple of America.*
8. ACER (*Opalus*) foliis lobatis, minimè inciſis fructu racemoſo. *The Italian Maple, commonly called Opalus.* Acer major folio rotundiore minùs laciniato & opalus Italorum, Raii Hiſt.
9. ACER (*Monſpeſulanum*) foliis trilobis integerrimis. Prod. Leyd. 459. *The Montpelier Maple.* Acer trifolium. C. B. P. 431.
10. ACER (*Cretica*) foliis trilobis integerrimis ſubtus pubeſcentibus. *Cretan Maple with three entire lobes to the leaves, which are ſomewhat hairy on their under-ſide.*

Theſe trees are eaſily propagated by ſowing their ſeeds, which ſhould be done ſoon after they are ripe, in a bed of common earth, covering them about half an inch thick with light mould. The ſpring following they will appear above ground, and, if kept clear from weeds, ſome of the ſorts will grow above a foot high

the firſt ſummer. The autumn following (if they are cloſe in the ſeed-bed) it will be proper to tranſplant them into a nurſery, in rows at three feet diſtance, and two feet aſunder in the rows; in which place they may remain three or four years, by which time they will be large enough to plant out for good.

If the ſeeds of any of the ſorts of Maple are kept out of the ground till ſpring, they rarely come up the ſame year, and many times do not grow; ſo that the ſureſt method of raiſing them is, to ſow the ſeeds as ſoon as poſſible when they are ripe; and, if the ſeeds are to be tranſported to any diſtance, it will be proper to put them up in ſand, or earth, whereby their growing quality will be preſerved.

The firſt and fourth ſorts are very proper to make plantations near the ſea, or to ſhelter ſuch plantations of trees as are too nearly ſituated thereto. For both theſe ſorts thrive, and reſiſts the ſpray, which is uſually blown from the ſea, better than moſt other trees do.

The variegated ſort is alſo raiſed from ſeeds of the ſame kind; and moſt of the plants ſo raiſed, will be as finely ſtriped as the old plant from whence the ſeeds were taken, which is not common to many other variegated plants.

The common Maple is too well known to need any particular account, it growing, very frequently, in hedge-rows in moſt parts of England. It is raiſed in the ſame manner with the former.

The Virginian flowering Maple was raiſed from ſeeds, which were brought from Virginia many years ſince by Mr. John Tradeſcant, in his garden at South Lambeth, near Vauxhall, and ſince, in the gardens of the Biſhop of London, at Fulham, where the trees have flowered for ſeveral years, and produced ripe ſeeds, from which ſeveral trees have been raiſed. It may be alſo propagated by laying down the young branches early in the ſpring, giving them a little ſlit at a joint, by which means they will have taken ſufficient root in two years, to be tranſplanted elſewhere. They require a ſituation a little defended from the north-eaſt winds, eſpecially while young; and delight in a moiſt light ſoil, in which they thrive much better than in a dry ground, and will produce more flowers, and better ſeeds. This tree commonly flowers in the beginning of April, and the ſeeds are ripe in five or ſix weeks after, at which time they ſhould be ſowed; for they are very apt to periſh, if kept long out of the ground.

There is another variety of the flowering Maple, which was ſent from America to Sir Charles Wager, and flouriſhed ſeveral years in his garden at Parſons-green, near Fulham. This is by the gardeners titled Sir Charles Wager's flowering Maple. The flowers of this kind come out in large cluſters, and ſurround the younger branches, ſo as to appear at a ſmall diſtance covered with them. It is now become pretty common in ſome of the nurſeries near London, ſo that the former ſort is not ſo much eſteemed, being leſs beautiful; but it is doubtful if they are diſtinct ſpecies.

The Aſh-leaved Maple is a very ſtrong ſhooting tree, and is, in Virginia, one of the largeſt trees of this kind. It muſt be planted in places not too much expoſed to violent winds, being ſubject to ſplit thereby. This tree ripens ſeeds very well in England, by which means it is eaſily propagated, or by cuttings planted in autumn.

The Norway Maple has a milky ſharp juice, ſo that few inſects care to prey thereon, by which means the leaves are ſeldom eaten or defaced; and being ſmooth, and of a ſhining green, they have a much better appearance than thoſe of the Sycamore; and in the ſpring, when the flowers are out, have great beauty. This tree is alſo raiſed by ſeeds, of which it affords great quantities, which riſe and grow from the ſcattered ſeeds as well as the common ſort; it will alſo grow from cuttings, if they are planted in the autumn.

The variegated kind may alſo be propagated by inoculating a bud of the ſtriped kind into one of the plain ſort, though I am not at preſent ſure whether it will take upon any other ſort of Maple, not having made the experiment; but I believe it can ſcarce fail. Moſt, if not all the other ſorts of Maples, take very well upon each other.

The American Sugar Maple has ſome reſemblance to the Norway, when the plants are young; but as they grow up the leaves are more deeply divided, and their ſurfaces leſs ſmooth, ſo that they are then eaſily diſtinguiſhed. From this tree the inhabitants of North America make a very good ſort of ſugar, in large quantities, by tapping the trees early in the ſpring, and boiling the juice, which drawn out till the fæces ſubſide, is the ſugar; but I am of opinion, that the people make ſugar from more than one ſort of Maple in America, for I have found that the Aſh-leaved Maple abounds with a ſaccharine juice, in full as great plenty as any other ſort. Mr. Ray and Dr. Liſter, prepared a tolerable good ſort of ſugar from our greater Maple, by tapping ſome of the trees in their bleeding ſeaſon; and I have obſerved, upon cutting off branches from the ſcarlet Maple in February, a great quantity of a very ſweet juice hath flowed out for ſeveral days together.

The eighth ſort of Maple is very common in moſt parts of Italy, but particularly about Rome, where it is one of the largeſt trees of that country, and is eſteemed for the ſize of the leaves, which are large, affording a great ſhade; ſo that theſe trees are frequently planted by the ſides of roads, and near habitations. In England this tree is very rarely to be met with, though it is hardy enough to bear the open air; but as the ſeeds have not been brought over to England till lately, there are no large plants in the Engliſh gardens at preſent.

The ninth ſort is common in the ſouth of France and Italy; the leaves of this reſemble thoſe of the common Maple, but are of a much thicker ſubſtance, and not ſo large, but are of a ſhining green colour. They continue in verdure very late in the autumn, which renders the trees more valuable. At preſent, this ſort is not common in England. I raiſed ſeveral plants from ſeeds, ſome of which have for ſeveral years produced good ſeeds in the Chelſea garden, where from the ſcattered ſeeds the plants come up annually in plenty.

The tenth ſort hath ſome reſemblance to the ninth. The leaves of this ſort are of a much thinner texture, and their foot-ſtalks are covered with a ſoft hairy down, whereas thoſe of the other are ſmooth and ſtiff. This ſort grows naturally in the Levant.

Moſt of the ſorts of Maple which come from America, are very impatient of heat while young; their ſeeds therefore ſhould be ſown in a ſheltered ſituation, for if the plants are expoſed to the full ſun but one day, when they firſt appear, few of them will ſurvive it; but eſpecially the Sugar Maple, of which ſort I conſtantly loſt moſt of the plants, till I had the precaution to place the pots, in which the ſeeds were ſown, entirely in the ſhade; for no ſooner are they expoſed to the ſun, but they are immediately attacked by inſects, which in one day will devour their ſeed leaves, after which the plants ſuddenly drop to the ground. This precaution therefore is neceſſary to be obſerved, in raiſing moſt of the ſorts of Maple from ſeeds.

The timber of the common Maple is far ſuperior to the Beech for all uſes of the turner, particularly diſhes, cups, trenchers, and bowls; and when it abounds with knots (as it very often doth), it is highly eſteemed by the joiners for inlayings, &c. and alſo for the lightneſs of the wood, is often employed by thoſe that make muſical inſtruments; and for the whiteneſs of its wood, it was formerly in great requeſt for tables, &c.

ACETOSA [of *acetoſus*, L. eager, ſour.] The Sorrels are by Dr. Linnæus joined to the genus of Dock, under the title of RUMEX; but as all the known ſpecies of Sorrel, have male flowers growing upon diſtinct roots from the female, therefore by his method ſhould be ranged in his twenty-ſecond claſs titled Diœceia; therefore I have taken the liberty to ſeparate theſe from the Docks, rather to preſerve their old title,

as the plants have been long uſed both in the kitchen and ſhops.

The Characters are,

It hath male and female flowers in different plants; the male flowers have a three leaved empalement, in which are included ſix ſtamina, crowned with flat oblong ſummits, but have no corolla: the female flowers have alſo a three leaved empalement, in the center of which is ſituated a three cornered germen, ſupporting a trifid ſtylus. The germen afterward turns to a triangular ſeed.

The Species are,

1. Acetosa (*Pratenſis*) foliis ſagittatis inferioribus pediculatis caulinis ſeſſilibus. *Common or Meadow Sorrel.* Acetoſa pratenſis. C. B. P. 114.
2. Acetosa (*Acetoſella*) foliis lanceolato-haſtatis radice repente. *Common Sheep's Sorrel.* Acetoſa arvenſis lanceolata. C. B. P. 114.
3. Acetosa (*Scutata*) foliis cordato haſtatis radice repente. *Round leaved or French Sorrel.* Acetoſa rotundifolia hortenſis. C. B. P. 114.
4. Acetosa (*Digyna*) humilis repens folio rotundo emarginato. *Low creeping Sorrel with a round indented leaf.* Acetoſa rotundifolia repens Eboraſcenſis folio in medio deliquium patiente. Mor. Hiſt.
5. Acetosa (*Alpina*) foliis cordatis acuminatis amplexicaulibus. *Alpine Sorrel, with heart-ſhaped pointed leaves embracing the ſtalks.* Acetoſa montana lato ari rotundo folio. Bocc. Muſ.
6. Acetosa (*Lunaria*) foliis ſubcordatis, caule arboreo. *Sorrel-tree with roundiſh heart-ſhaped leaves.* Acetoſa arboreſcens, ſubrotundo folio. Pluk. Alm. 8.
7. Acetosa (*Roſea*) foliis eroſis, valvulæ alterius ala maxima membranacea declinata. *Sorrel from Egypt with bitten leaves, and large membranaceous valves declining.* Acetoſa Ægyptia roſea ſeminis involucro. Shaw. Pl. Afr.
8. Acetosa (*Sterilis*) foliis oblongis pedunculis breviſſimus rarò florens. *Northern barren Sorrel.* This is the Acetoſa Muſcovitica ſterilis. Mor. Hiſt.

The firſt of theſe ſorts, though but ſmall in the fields, yet, when ſown in gardens, will produce fair large leaves; this is commonly cultivated in gardens. It muſt be ſown early in the ſpring, in a ſhady moiſt border; and if the plants are afterward removed into another ſhady border, at the diſtance of four or ſix inches ſquare, they will produce larger leaves, and continue longer. This is the common Sorrel uſed in medicine; but the Northern barren Sorrel is preferred to it in the kitchen-garden, becauſe it rarely runs to ſeed, but is increaſed by parting the roots either in ſpring or autumn, and is fit for uſe all the year.

The round leaved (or French) Sorrel, is a more grateful acid, ſo by many perſons is preferred to the other two ſorts for kitchen uſe; this is alſo a medicinal plant, and ſhould not be wanting in any good garden: it is a great runner at the root, by which means it is eaſily propagated, and the roots planted at the diſtance of two feet ſquare at leaſt: it will agree better with an open ſituation than the other two ſorts. And if the flower-ſtems and rambling branches are cut off in in the beginning of July, the roots will ſoon put out new leaves, which will be tender and much better for kitchen uſes, than the older leaves; ſo that by cutting down the ſhoots of ſome plants at different times, there will always be a ſupply of young leaves, which is the only part of the plant uſed in the kitchen. And this ſort is much preferable to the common Sorrel for ſoups, ſo many perſons have of late years cultivated it in their gardens, ſince the uſe of Sorrel has been greatly increaſed in England, by the introduction of French cookery, it being an ingredient in many of their ſauces and ſoups. Inſomuch that about Paris, Sorrel is cultivated in as great quantity as almoſt any other eſculent plant.

The Sheep's Sorrel is a common weed in moſt parts of England, growing upon dry banks and in gravelly ſoils in great plenty; for as it propagates very faſt by its creeping roots, ſo wherever it once gets poſſeſſion in the ground, it ſoon multiplies. This is rarely admitted to have a place in gardens, but as it has long been continued in the Diſpenſaries as a medicinal plant, ſo it is here inſerted.

The low creeping Northern Sorrel, is preſerved in many gardens for the ſake of variety, but has not been uſed in the kitchen. This ſort grows wild in moſt of the northern counties, as alſo in Wales. I have ſeen it growing in great plenty in Yorkſhire and Weſtmoreland. The leaves of this ſort have very ſhort foot-ſtalks, and are indented at both ends. Theſe grow near to the ground, and the flower-ſtems rarely riſe above ſix inches high. The roots creep in the ground, whereby it multiplies exceedingly in a proper ſituation. As this ſort grows naturally in ſhady moiſt places, ſo whoever is deſirous to have it thrive in a garden, muſt plant it in a north border and in a moiſt ſoil, where it may be propagated in plenty, and be uſed for the ſame purpoſes as the others.

The Alpine Sorrel is full as hardy as the common, and as the leaves are much larger, ſo they are better for the uſes of the kitchen, having as pleaſant an acid taſte, and being much more ſucculent. This may be propagated either by ſeeds, or parting of their roots, in the ſame manner as the common ſort; but the plants require more room, for which reaſon they ought not to be nearer than a foot from each other, eſpecially in good ground.

ACETOSELLA. See Oxalis.

ACHILLEA, Milfoil Yarrow, or Noſebleed.

The Characters are,

It hath a compound radiated flower, conſiſting of many tubulous florets, which are hermaphrodite, and compoſe the diſk of the flower; the female flowers are ranged round the border; theſe have their corolla ſtretched out on one ſide like a tongue, which compoſe the rays, all included in one common ſcaly empalement. The hermaphrodite flowers have each five ſhort ſlender ſtamina, accompanying a ſmall germen, which is ſituated in the bottom, and reſts upon a downy bed; the germen afterwards becomes a ſingle oval ſeed, having a down adhering to it.

The Species are,

1. Achillea (*Millefolium*) foliis bipinnatis nudis, laciniis linearibus dentatis. Hort. Cliff. 413. *Common Yarrow, called alſo Milfoil, Stratiotes, and Noſebleed.* Of this there is a variety with purple flowers, which is often found growing naturally in England.
2. Achillea (*Santolina*) foliis ſetaceis dentatis, denticulis ſubintegris ſubulatis reflexis. Hort. Cliff. 412. *Eaſtern Sneezwort with a Lavender-cotton leaf, and a lar ge flower.*
3. Achillea (*Tomentoſa*) foliis pinnatis hirſutis pinnis linearibus dentatis. Lin. Sp. Plant. 897. *Woolly Yarrow with yellow flowers.*
4. Achillea (*Pubeſcens*) foliis pinnatis, foliolis lanceolatis inciſis ſerratis ſubtus lanigeris. Hort. Cliff. 413. *Eaſtern Sneezwort with hoary Tanſey leaves, and the rays of the flower of a pale yellow colour.*
5. Achillea (*Abrotanifolia*) foliis pinnatis ſupra decompoſitis, laciniis linearibus diſtantibus. Flor. Leyd. Prod. 175. *Talleſt Eaſtern Yarrow, with a Wormwood leaf and yellow flowers.*
6. Achillea (*Clavennæ*) foliis pinnatifidis planis obtuſis tomentoſis. Lin. Sp. Plant. 898. *Broad-leaved Alpine umbelliferous Wormwood.*
7. Achillea (*Tanacetifolia*) foliis pinnatis foliolis lineari lanceolatis baſi ſurſum auctis. Flor. Leyd. Prod. 176. *Eaſtern Sneezwort with hoary Tanſey leaves, and a golden flower.*
8. Achillea (*Ageratum*) foliis lanceolatis obtuſis acutè ſerratis. Hort. Cliff. 413. *Commonly called Sweet Maudlin.*
9. Achillea (*Ægyptiaca*) foliis pinnatis foliolis obtusè lanceolatis ſerrato dentatis. Hort. Cliff. 413. *Hoary Sneezwort with creſted pinnulæ.*
10. Achillea (*Ptarmica*) foliis lanceolatis acuminatis argutè ſerratis. Lin. Sp. Plant. 898. *Common Ptarmica or Sneezwort.* Of this ſort there is a variety with double flowers which is preſerved in gardens.
11. Achillea (*Macrophylla*) foliis pinnatis planis inciſo ſerratis extimis majoribus coadunatis. Lin. Sp. Plant. 1265. *Alpine Sneezwort with Feverfew leaves.*

12. Achillea (*Nana*) foliis pinnatis dentatis hirſutiſſimis floribus glomerato umbellatis. Lin. Sp. Plant. 2671. *Hoary Alpine Milfoil, with a ſpecious flower.*
13. Achillea (*Nobilis*) foliis bipinnatis, inferioribus nudis planis, ſuperioribus obtuſis tomentoſis corymbis convexis confertiſſimis. Lin. Sp. 1268. *Noble or Sweet Milfoil.*
14. Achillea (*Alpina*) foliis lanceolatis dentato-ſerratis denticulatis tenuiſſimè ſerratis. Hort. Cliff. 413. *Alpine Sneezwort with leaves deeply ſerrated, commonly called White Maudlin.*

The firſt ſort here enumerated, is the common Yarrow or Milfoil, which grows naturally on banks and by the ſides of foot-paths in moſt parts of England, ſo is rarely allowed a place in gardens; but being an officinal plant, it is here mentioned to introduce the others. Of this there is a variety with purple flowers, which is frequently found wild in England; but the plants ſeldom continue to produce purple flowers long, when they are tranſplanted into gardens. The Yarrow creeps greatly by its roots, and alſo multiplies by ſeeds, ſo that it becomes a troubleſome weed, where it is permitted to grow.

The third ſort is often planted in gardens for the ſake of variety. This is of humble growth, ſeldom riſing more than eight or nine inches high. The leaves are finely cut, and are very hoary; the flowers are of a bright yellow colour, and continue long in beauty. It grows naturally in the ſouth of France, Spain, and Italy, but will live in the open air in England. It is increaſed by parting of the roots, the beſt time for which is in October.

The fourth, fifth, ſeventh, and ninth ſorts, are natives in the iſlands of the Archipelago. Theſe were introduced into France by Dr. Tournefort. The ninth ſort hath very hoary leaves, which remain all the year; and the plants growing cloſe and low, make a pretty appearance at all ſeaſons. The flowers are produced in umbels on the top of the ſtalks, which are yellow; theſe appear in June, July, Auguſt, and September, and are of long duration, ſo that frequently ſome of them continue the greater part of the winter. This ſort muſt have a dry ſoil and a warm ſituation, where it will endure the cold of our ordinary winters in the open air, but in very ſevere froſt they are often deſtroyed; a few plants therefore ought to be ſheltered under a frame in winter, to preſerve the kind. It is propagated by ſlips, which may be taken off and planted in a ſhady border, any time in ſummer, when they will take root in about ſix weeks, and then may be tranſplanted either into pots, or the borders where they are to remain. This ſort rarely perfects its ſeeds in England.

The fourth, fifth, and ſeventh ſorts, are of taller growth, propagating by their roots, and ripening ſeeds in England, ſo that they may be obtained in plenty; and as they require little care to cultivate them, being hardy enough to live in the open air, they may be allowed a place in gardens, where, by their hoary leaves, they will make a pretty diverſity; and their flowers continuing long, though not the moſt beautiful, yet make a pretty contraſt when intermixed with others.

The ſixth ſort is a very humble plant; the foot-ſtalks which ſupport the umbels of its flowers, rarely riſe above ſix inches high. As for the flowers themſelves, they are near as large as thoſe of the common Sneezwort, white, and growing in flat umbels; theſe appear in June and July. The leaves of the plant have ſome likeneſs to thoſe of the common Wormwood, and are very hoary, growing cloſe to the ground, decaying in autumn, ſo that in winter they make little appearance. This ſpecies of Yarrow is propagated by parting of the roots, either in ſpring or autumn, and ſhould have a dry ſoil, for much wet in winter will rot them. It never perfects its ſeeds here, and therefore can only be multiplied the other way. This ſort is a native of the Alps.

The eighth ſort is commonly known by the title of Sweet Maudlin in the markets; it was formerly more uſed in medicine than at preſent, ſo that there is ſcarce any of it cultivated in the gardens for ſale; and when it is aſked for, the people in the markets commonly give the fourteenth ſort for it, which being a very hardy plant, and eaſily propagated, is now generally ſold for the other. For though the true Maudlin is hardy in reſpect to cold, yet in wet winters the roots are often killed by moiſture, eſpecially thoſe which are in good ground; but when the plants grow out of the joints of walls, or in rubbiſh, they will live many years without care. There are two other varieties of this plant which are found growing naturally in Spain, one of them having longer and more compact umbels of flowers, and the other hath broader leaves and ſmaller flowers; but theſe approaching ſo near to the common ſort in every other particular, I thought it would be needleſs to enumerate them as diſtinct ſpecies. The common Maudlin is propagated by parting of the roots, either in ſpring or autumn; and as it ripens ſeeds very well, ſo it may be propagated by ſowing the ſeeds in April. It flowers in June and July, and the ſeeds are ripe in September.

The tenth ſort is the common Sneezwort; this grows wild in the woods and other ſhady places, in many parts of England, ſo is not admitted into gardens; this creeps greatly by its roots, ſo as to cover a large ſpot of ground ſoon. It is ſometimes uſed in medicine, and in the ſpring the young tender ſhoots are put into ſallads, to correct the coldneſs of other herbs; and the roots are uſed for the tooth-ach, whence ſome have given the title of Field Pellitory to this plant. There is a variety of this with double flowers, which is preſerved in gardens, and is commonly known by the title of double Maudlin. When this is planted in pots, ſo as to confine the roots from creeping, the ſtalks will grow cloſer together, and then they make a tolerable appearance when in flower; but where the roots have full liberty to run, the ſtalks grow farther diſtant from one another, in which caſe they make but an indifferent appearance. It flowers in July and Auguſt.

The fourteenth ſort has ſome reſemblance to the tenth, but the leaves are longer, deeper cut on their edges, and are of a darker green colour. This propagates faſt enough by its creeping root, and is very hardy.

The eleventh and twelfth ſorts are natives of the Alps, and conſequently very hardy; they multiply by ſeeds, and alſo by parting of their roots, and will thrive in almoſt any ſoil, but love an open expoſure. The eleventh produces many ſtalks which riſe near three feet high, having looſe branching umbels of white flowers on their top, reſembling thoſe of the common Sneezwort, but larger. The twelfth ſort hath hoary leaves, and the umbels of its flowers are more compact; the ſtalks of this do not riſe more than a foot high. Both theſe deſerve a place in gardens.

The thirteenth ſort approaches near the firſt, but the leaves are of a pale green, and not ſo long, or ſo much cut as thoſe of the firſt; theſe have a ſtrong ſweet ſcent when bruiſed. It is equally hardy with the firſt, and therefore requires little culture.

ACHRAS. See Sapota.

ACHYRANTHES.

The Characters are,

The empalement conſiſts of five pointed rigid leaves which are permanent; the flower hath no petals; but in the center of the empalement is ſituated the pointal, having a bifid ſtigma, attended by five ſtamina, ſupporting ſmall ſummits. The pointal afterward becomes a ſingle roundiſh ſeed, incloſed in the empalement.

The Species are,

1. Achyranthes (*Aſpera*) caule erecto, calycibus reflexis ſpicæ adpreſſis. Fl. Zeyl. 105. *Achyranthes with an upright ſtalk, and a reflexed flower-cup.* Amaranthus ſiculus ſpicatus radice perenni. Bocc. Rar. Plant. 16. tab. 9.
2. Achyranthes (*Indica*) caule erecto, foliis obverſè ovatis undulatis floribus reflexis. *Achyranthes with an erect ſtalk, obverſe oval waved leaves and reflexed flowers.*

A C O

3. ACHYRANTHES (*Lappacea*) caule erecto, ſpicâ interruptâ, floribus externè lanatis. Lin. Sp. Plant. 204. *Achyranthes with an upright ſtalk, a looſe ſpike, and the outſide of the flower woolly.*

4. ACHYRANTHES (*Lanata*) caule erecto, ſpicis ovatis lateralibus calycibus lanatis. Lin. Sp. Plant. 204. *Achyranthes with an erect ſtalk, and oval ſpikes of flowers produced from the wings of the leaves, which are covered with a ſoft down.*

The firſt ſort hath been long in the Engliſh gardens, where it hath been preſerved more for the ſake of variety, than for its beauty or uſe. It grows near three feet high, with oblong pointed leaves; the flowers come out in long ſpikes from the extremity of the branches, which are compoſed of an empalement, with a ſtyle and five ſtamina, but hath no petals, ſo may be ranged under the claſs of blink flowers. The plants of this ſort muſt be raiſed on a hot-bed, and when they have acquired ſtrength, they may be tranſplanted into the full ground, where they will flower in July, and their ſeeds ripen in September. If theſe are kept in pots, and put into a warm green-houſe in winter, they will live two or three years, where perſons are inclined to keep them ſo long. This ſort grows naturally in the iſlands of America, and alſo in India and Sicily.

The ſeeds of the ſecond ſort I received from Malabar, which have for ſome years flouriſhed at Chelſea, and annually produced ripe ſeeds, which have never varied from the parent plant.

The third and fourth ſorts grow naturally at the Cape of Good Hope, from whence I received their ſeeds. Theſe are all preſerved in botanic gardens for the ſake of variety, but have no great beauty to recommend them, to thoſe who do not cultivate plants for the improvement of that ſcience.

They may all be propagated in the ſame manner as the firſt, and will perfect their ſeeds the ſame year; but the plants of the three laſt ſorts may be preſerved through the winter if placed in a ſtove, for they are too tender to be kept in a green-houſe where there is not artificial heat.

ACINOS. See THYMUS.

ACINUS, or ACINI, by good authors is not uſed for the grape ſtone, but the grape itſelf, as appears from the following paſſage in Columella, *Cum expreſſeris vinacea, quæ acinis celantur.* It is commonly uſed for thoſe ſmall grains growing in bunches, after the manner of grapes, as Liguſtrum, &c.

ACNIDA, Virginia Hemp.

This plant grows naturally in Virginia, and in ſome other parts of North America, but is rarely cultivated in Europe, except in ſome few botanic gardens, for the ſake of variety. It hath male and female flowers growing upon different roots, ſo is near of kin to the Hemp, under which title it has been ranged by ſome former botaniſts. But as it is a plant of little beauty, and at preſent no uſe has been made of it, it is to little purpoſe to ſay more of it here.

ACONITUM, Wolfsbane, or Monkſhood, [of ἄκων, or ἀκὴ, a dart, becauſe the Barbarians uſed to daub their darts therewith; others of ἐΐκονέω, to accelerate, becauſe it haſtens death].

The CHARACTERS are,

The flower hath no empalement, but conſiſts of five unequal petals, which vary in different ſpecies; the galea (or hood) is tubulous, and covers the other parts of the flower like a friar's cowl; the two lateral petals, which incloſe the ſtamina and ſtyle are equal: theſe are concave and ſlightly indented in the middle. The two lower petals are narrow and oblong: in the bottom of the flower are placed two nectarii, upon which are ſituated the ſtyles; in ſome there are two, in others three, and ſome have five: theſe are forked, and ſtretch out far beyond the ſtamina, which are numerous and irregular: after the flower is paſt, the germen become oblong ſeed-veſſels terminated in a point, and coaleſcing at their baſe; theſe have but one cell, which is filled with angular rough ſeeds.

This genus of plants is by Dr. Linnæus ranged in the third ſection of his thirteenth claſs, entitled Polyandria trigynia, from the flowers having many ſtamina, and three ſtyles.

The SPECIES are,

1. ACONITUM (*Lycoctonum*) foliis palmatis multifidis villoſis. Lin. Sp. Plant. 532. *Yellow Wolfsbane or Monkſhood, with palmated hairy leaves finely divided.* Aconitum lycoctonum luteum. C. B. P. 183.

2. ACONITUM (*Altiſſimum*) foliis palmatis, nervoſis glabris. *Greateſt yellow Wolfsbane, with nervous, ſmooth, palmated leaves.* Aconitum luteum majus ampliore caule amplioribuſque foliis. Dod. p. 441.

3. ACONITUM (*Variegatum*) foliis multifidis laciniis ſemipartitis ſupernè latis. Hort. Cliff. 214. *Leſſer Wolfsbane with blue flowers, whoſe under leaves are cut into many parts, and whoſe upper have broader ſegments.* Aconitum cæruleum minus, ſive napellus minor. C. B. P. 183.

4. ACONITUM (*Anthora*) floribus pentagynis foliorum laciniis linearibus. Lin. Sp. Plant. 532. *Wholeſome Wolfsbane with yellow flowers.* Aconitum ſalutiferum ſive anthora. C. B. P. 184.

5. ACONITUM (*Napellus*) foliorum laciniis linearibus ſupernè latioribus linea exaratis. Hort. Cliff. 214. *Wolfsbane, or Monkſhood, with large blue flowers.* Aconitum cæruleum, ſive napellus. 1 C. B. Pin. 183.

6. ACONITUM (*Pyramidale*) foliis multipartitis, ſpicis florum longiſſimis ſeſſilibus. *The common blue Monkſhood, with a long ſpike of flowers.* Aconitum pyramidale multiflorum. H. R. Par.

7. ACONITUM (*Alpinum*) foliorum laciniis pinnatifidis flore maximo. *Large flowered Monkſhood, or Wolfsbane, of a blue purple colour.* Aconitum cæruleo purpureum flore maximo, ſive napellus. 4 C. B. P. 183.

8. ACONITUM (*Pyrenaicum*) foliis multipartitis laciniis linearibus incumbentibus ſquamoſis. Hort. Upſal. 152. *Yellow Pyrenean Monkſhood, or Wolfsbane, with fine cut leaves.* Aconitum Pyrenaicum luteum foliorum ſegmentis ſibi invicem incumbentibus. Raii Syll. 367.

9. ACONITUM (*Cammarum*) floribus ſubpentagynis, foliorum laciniis cuneiformibus inciſis acutis. Lin. Sp. Plant. 751. *Monkſhood with flowers, having commonly five ſtyles, and the ſegments of the leaves awl-ſhaped.*

10. ACONITUM (*Orientale*) elatius, foliis palmatis flore magno albo. *Eaſtern Monkſhood, with a tall ſtalk and a large white flower.* Aconitum lycoctonum orientale flore magno albo. Tourn. Cor.

The ſixth ſort is the moſt common in the Engliſh gardens; this is cultivated for the beauty of its long ſpike of blue flowers, which are brought to the markets in London, towards the end of May, when it commonly flowers; ſo that theſe being intermixed with the Guelder Roſes and other flowers of the ſame ſeaſon, make an agreeable variety, when properly blended, to adorn halls and other apartments. But as moſt of the ſpecies of Monkſhood are a deadly poiſon, not only to men but to brutes alſo, they ought not therefore to be admitted into places where children or ignorant perſons frequent, leſt by ſmelling to theſe flowers, they ſhould draw ſome of the farina into their noſtrils, which may prove very hurtful to them, as I can from experience aſſert for fact. We have an account of a man who was poiſoned in the year 1732, by eating ſome of this plant, which by an unſkilful perſon was put into a ſallad inſtead of Celery. This is particularly mentioned in the Tranſactions of the Royal Society, N° 432. Dodonæus alſo relates a ſtory of the bad effects of one ſpecies of Monkſhood, which was recent in his time. Some unſkilful perſons had gathered the young ſhoots of the blue Monkſhood to eat in a ſallad, and all that eat of them were ſeized with terrible ſymptoms, and ſoon died. Dr. Turner alſo mentions, that ſome Frenchmen at Antwerp eat the ſhoots of this plant for thoſe of Maſterwort, and all of them died in two days, except two players who threw them up by vomit. I have known perſons who by ſmelling to the flowers, have been ſeized with ſwooning fits, and have loſt their ſight for two or three days.

The fourth ſort is that which is made uſe of in medicine, and is eſteemed an antidote to thoſe which are

poiſonous. This is by ſome writers titled Anthora, and by others Antithora, as the poiſonous kinds have been called Thora. Whenever therefore any of the ſpecies of this genus is ordered in medicine, this is the ſort intended.

Moſt, if not all the other ſorts are eſteemed poiſonous; but thoſe with blue flowers are ſuppoſed to be of a much ſtronger quality, than the yellow or white flowered kinds. It is confidently affirmed, that the huntſmen on the Alps, who hunt the wolves and other wild animals, dip their arrows into the juice of theſe plants, which renders the wounds made by them deadly.

The ſixth ſort is the firſt which flowers; this grows near four feet high, and the ſpikes of flowers are upward of two feet long, ſo that when it is in flower, it makes a pretty appearance; and being very hardy, growing in any ſoil or ſituation, and multiplying greatly by the root, has induced many perſons to allow it a place in their gardens, for the ſake of its flowers, who being ignorant of its dangerous qualities, have permitted it to ſpread and propagate greatly. It flowers in May and June. The ſeeds are ripe in September; but as this ſort multiplies ſo greatly by the root, it is rarely propagated the other way.

The firſt and ſecond ſorts are the next which flower; theſe come about the middle of June, and if the ſeaſon is not warm, will continue in flower till Auguſt. The firſt grows upwards of three feet high, and the ſecond above four, the ſpikes of flowers too in this being much longer than the former.

The third ſort flowers a little later than either of thoſe, but ſeldom grows more than two feet high, and the ſpikes of flowers are much ſhorter than either of the two laſt.

The wholeſome Wolfsbane flowers in the middle of Auguſt, and often continues in beauty till the middle of September; the flowers are not ſo large as thoſe of ſome other ſorts, but being of a ſulphur colour, make a pretty appearance in the borders of the flower-garden. This ſort will not thrive ſo well under the ſhade of trees as many of the other ſorts, and therefore muſt have an open expoſure.

The ninth and tenth ſorts flower the beginning of July. The ninth uſually grows about four feet high, but the tenth I have ſeen upwards of ſix. This ſort is at preſent very rare in Europe. It was found by Dr. Tournefort in the Levant, who ſent the ſeeds to the royal garden at Paris, where it was firſt cultivated in Europe, and from that garden, others have been furniſhed with the ſeeds.

The eighth ſort flowers in July. This grows about four feet high, having a long ſpike of yellow flowers of a middling ſize, wherefore they may be allowed a place among ſhrubs, or in ſuch parts of the garden as are not frequented by children.

The fifth, ſixth, and ſeventh ſorts flower in Auguſt, when they make a pretty appearance; and were it not for their noxious quality, would deſerve a place in every garden. There are two or three varieties of the fifth ſort, one with white, another with Roſe coloured, and a third with variegated flowers; but theſe are only varieties which often change. The Napellus minor is alſo apt to change in the colour of its flower; of this ſort I have had ſome plants with variegated flowers, but they changed in two years and became plain, nor did their ſeeds produce any plants with variegated flowers. The ſeventh ſort will grow to the height of five feet in good ground; the flowers are very large, but not many upon each ſpike. Theſe are of a deep blue colour.

All the ſorts of Monkſhood may be propagated by ſeeds, which ſhould be ſown in the autumn, in a ſhady ſituation: the plants often come up the firſt year, if the ſeeds are ſown in autumn, otherwiſe it is the ſecond ſpring before they appear; therefore the ground ſhould be kept clean from weeds all the following ſummer, and when the plants come up, they ſhould be watered in dry weather until they are fit to tranſplant; when they are to be carefully taken up, and planted in ſhady borders, at the diſtance of four inches each way, obſerving to water them until they have taken good root in the ground; after which time they will require no other care but to keep them clean from weeds, till the following autumn, when they may be tranſplanted to the places where they are to remain.

The common Monkſhood will grow under the ſhade of trees, in wilderneſſes or woods, and will increaſe faſt enough by means of its creeping roots; but tho' moſt of the other ſorts delight in ſhade, yet few of them will thrive under trees, for which reaſon they ſhould be planted in ſhady borders which are not overhung by trees, where they will continue much longer in flower, and thrive better than in an open expoſure.

ACONITUM HYEMALE. See HELLEBORUS.

ACORUS, the Sweet Ruſh.

The CHARACTERS are,

It hath a ſimple cylindrical ſtalk, which is cloſely covered with ſmall flowers, ſo as to form a ſort of katkin (or iulus). Theſe flowers have no empalement, but are compoſed of ſix concave obtuſe petals. In the center of the flower is ſituated a ſwelling germen, attended by ſix ſtamina, which are extended beyond the petals, and are crowned with thick double ſummits; the germen afterward turns to a ſhort triangular capſule, having three cells, in which are lodged oval oblong ſeeds.

Dr. Linnæus ranges this genus in his ſixth claſs of plants, entitled Hexandria monogynia, the flowers having ſix ſtamina and one ſtyle.

We have but one SPECIES of this plant,

ACORUS (*Calamus*) Roy. Leyd. 6. *The ſweet ſmelling Flag or Calamus.* Acorus verus, ſive calamus aromaticus. C. B. P. 34.

This plant grows naturally in ſtanding waters which are ſhallow, and is found wild in ſome parts of England; particularly in Norfolk, and alſo near Uxbridge in Middleſex, and in ſeveral parts of the north. In Holland this plant abounds in moſt of their ditches and ſtanding waters. The leaves of this plant, when broken, ſend forth a ſtrong aromatic ſcent; the roots are much ſtronger, and have been long uſed in medicine. This may be tranſplanted into a garden, where if the ground is moiſt, it will grow very well; but never produces its ſpike, unleſs it grows in the water. It loves an open ſituation, and will not thrive well under the ſhade of trees. The ſpikes of flowers (which are by many writers termed (Juli) appear toward the latter end of June, and continue till Auguſt. When this plant is fixed in a proper ſituation, it will multiply by its creeping roots faſt enough.

ACRIVIOLA. See TROPÆOLUM.

ACTÆA, Herb Chriſtopher.

The CHARACTERS are,

The empalement of the flower is compoſed of four concave obtuſe leaves, which fall off; the flower hath four petals which are much larger than the empalement. In the center is placed the oval germen, crowned with an oblique depreſſed ſtigma, attended by numerous ſlender ſtamina, crowned with erect double roundiſh ſummits. After the flower is paſt, the germen becomes an oval or globular berry, having one cell, in which are lodged four ſeeds, which are roundiſh on their outſide, but angular where they are joined.

Dr. Linnæus ranges this genus under his thirteenth claſs of plants, entitled Polyandria monogynia, the flowers having many ſtamina and one germen.

The SPECIES are,

1. ACTÆA (*Spicata*) racemo ovato fructibuſque baccatis. Lin. Sp. Plant. 504. *Common Herb Chriſtopher, or Bane Berries.* Chriſtophoriana vulgaris noſtras racemoſa & ramoſa. Mor. Hiſt. p. 2, 8.
2. ACTÆA (*Alba*) racemo ovato baccis niveis, radice tuberoſa. *American Herb Chriſtopher, with white berries.* Chriſtophoriana Americana baccis niveis. Mor. Hiſt. p. 28.
3. ACTÆA (*Racemoſa*) racemis longiſſimis fructibus unicapſularibus. Lin. Sp. Pl. 504. *American black or wild Snakeroot.* Chriſtophoriana Americana procerior & longiùs ſpicata. Hort. Elth. 79.

The firſt ſort grows naturally in ſeveral places in the northern counties of England: I found it in pretty great

great plenty in a wood near Kirby Lonſdale, as alſo near Ingleborough Hill in Yorkſhire. It grows two feet and a half high, the foot-ſtalks of the leaves ariſe from the root; theſe divide into three ſmaller foot-ſtalks, each of which divide again into three, and theſe have each three lobes, ſo that each leaf is compoſed of twenty-ſeven lobes (or ſmall leaves). The flower-ſtem which ariſes from the root, is garniſhed with leaves of the ſame form, but are ſmaller. On the top of the ſtalk appears the flowers, which grow in ramoſe ſpikes, and are of a pure white; theſe come out in May, and are ſucceeded by black ſhining berries about the ſize of Peaſe, which ripen in the autumn. This is propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till ſpring, the plants will not come up till the year after, ſo that a whole year will be loſt. They ſhould be ſown on a ſhady border, and kept clean from weeds. As the ſeeds ſeldom come up all at the ſame time, the border in which they are ſown ſhould not be diſturbed till the following autumn, to ſee what plants may appear; when the plants ſhould be tranſplanted into a ſhady border, where they may remain to flower. This plant hath a perennial root, which laſts many years, but the ſtalk is annual, and periſhes in autumn, ſoon after which is the beſt time to tranſplant them.

The ſecond ſort grows naturally in North America, from whence I have received the ſeeds; the leaves of this are ſomewhat like thoſe of the firſt ſort, but are not ſo deeply indented on their edges. The flowers grow in a more compact ſpike, and the berries are very white and tranſparent when ripe; the roots of this is compoſed of thick tubers, or knobs. This is an abiding plant, and delights in a light moiſt ſoil, and a ſhady ſituation; it may be propagated in the ſame manner as the former.

The third ſort is a native of North America, where it is called Black Snakeroot, to diſtinguiſh it from the common Snakeroot. This plant hath large compound leaves, which riſe immediately from the root, and are branched after the ſame manner as the firſt ſort, which grow more than two feet high. The flower-ſtems frequently riſe to the height of four or five feet, being terminated by a long ſpike of white flowers, which is reflexed at the top. This flowers in June, or beginning of July, but does not perfect ſeeds in England. During the time of its flowering, the plant makes a good appearance in a garden, and therefore deſerves a place in the ſhady borders, or among ſhrubs; where, if it be not over-hung by them, it thrives very well, and being hardy, will require no other care than the ſhrubs themſelves. It is generally propagated by ſeeds, which are annually ſent from North America; it loves a moiſt light ſoil, and a ſhady ſituation.

The root of this plant is greatly uſed by apothecaries and phyſicians in America, in many diſorders, and is ſuppoſed to be an antidote againſt poiſon, or the biting of the rattle-ſnake.

ADANSONIA, Baobab Ethiopian ſour Gourd, or Monkies Bread.

This plant is ſo named from one Mr. Adanſon, a French ſurgeon, who reſided ſome years at Senegal, in Africa, and during that time made ſeveral diſcoveries in natural hiſtory, and brought home a curious collection of ſeeds and plants.

The CHARACTERS are,

It hath a cup-ſhaped empalement, divided into five ſegments at the brim; which turn backward, and the empalement falls off: the flower has five roundiſh petals, whoſe brims are reflexed; at the tail of theſe are ſituated many ſtamina joined in a tube, which ſpread horizontally above, and are crowned by kidney-ſhaped ſummits. The germen is oval, the ſtyles are long, variouſly intorted, having many hairy ſtigma. It hath a large ovalligenous capſule of ten cells, filled with a farinaceous ſour pulp, incloſing many kidney ſhaped ſeeds.

This genus of plants is ranged in the fifth ſection of Linnæus's ſixteenth claſs, intitled Monodelphia polyandria, the flowers having many ſtyles which coaleſce with the ſtamina in one houſe.

There is known but one SPECIES at preſent,

ADANSONIA. This is the Baobab. Alp. Egypt. c. 27. f. 28.

The young plants, and alſo moſt of the new branches, have ſingle ſpear-ſhaped leaves towards their lower part, but at their extremities the leaves have ſome three, and others five lobes, of the ſame ſize and form as the lower, which are diſpoſed like a hand; theſe are entire, ending in a point, and fall off in winter. The ſtems are large and woody, but of a ſoft texture, and have generally a large ſwelling near the root.

It is propagated by ſeeds, which muſt be procured from the country where it grows naturally (for it doth not produce any in Europe); theſe muſt be ſown in pots, and plunged into a hot-bed, where, in about ſix weeks, the plants will come up, and in a ſhort time after be fit to tranſplant; when they ſhould be each planted into a ſeparate pot, filled with light ſandy earth, and plunged into a freſh hot-bed, obſerving to ſhade them until they have taken new root; after which time they ſhould have free air admitted to them every day in warm weather, but muſt be ſparingly watered; for as their ſtems are ſoft (eſpecially when young) too much wet will cauſe them to rot. As the plants advance in their growth, they are to be ſhifted into larger pots, but muſt conſtantly be plunged into the bark-bed, being too tender to thrive in this country without this artificial heat, therefore they muſt conſtantly remain in the ſtove with other tender exotic plants: the plants when young make great progreſs in their growth, where they are properly treated; for in three years many of them have been more than ſix feet high, and have put out ſeveral lateral branches, their ſtems were alſo proportionable; but after four or five years growth, they are almoſt at a ſtand, their annual ſhoots rarely exceeding two or three inches.

The account which Monſieur Adanſon gives of the trees he ſaw at Senegal and other parts of Africa, in regard to the ſize of them is amazing, ſeveral of which he meaſured round their ſtems from ſixty-five to ſeventy feet in circumference, but their height was not extraordinary. The trunks of theſe trees were from eight to twelve feet high, dividing into many horizontal branches which touched the ground at their extremities; theſe were from forty-five to fifty-five feet long, and were ſo large in circumference, that each branch was equal to a monſtrous tree in Europe; and where the water of a neighbouring river had waſhed away the earth, ſo as to leave the roots of one of theſe trees bare and open to ſight, they meaſured one hundred and ten feet long, without including thoſe parts of the roots which remained covered with earth or ſand: for he deſcribes the plains where the trees grow to be a barren moveable ſand, ſo that from its being continually ſhifted by the winds, there are no tracts diſcoverable, whereby perſons can be guided in travelling over them.

Proſper Alpinus in his hiſtory of Egyptian plants, deſcribes this tree, to which he gives the title of Baobab, ſo that it alſo grows in that country; but he does not mention any of them to be near the ſize of thoſe deſcribed by Monſieur Adanſon.

There were ſome plants of this ſort in ſeveral gardens, which were raiſed from ſeeds obtained from Grand Cairo in the year 1724, by the late Dr. William Sherard, ſome of which were grown to the height of eighteen feet; but in the ſevere winter 1740, they were all loſt, and ſince that time there has not been any of the ſeeds brought to England, till the return of Mr. Adanſon to Paris in 1754, who ſent ſome of the ſeeds over here, which have ſucceeded, and many of the plants are now upwards of eight feet high.

ADELIA, we have no Engliſh title for this genus of plants.

The CHARACTERS are,

It hath male and female flowers upon different roots: the male flowers have an empalement of one leaf cut into five concave ſegments, but no corolla; it hath many ſlender ſtamina the length of the empalement, crowned by roundiſh ſummits. The female flowers have a five leaved concave empalement which is permanent; they have no corolla, but

a roundiſh germen with three ſhort divaricated ſtyles, and torn ſtigma. The capſule hath three cells, each containing one roundiſh ſeed.

This genus of plants, is ranged by Dr. Linnæus, in the twelfth ſection of his twenty-ſecond claſs, which includes thoſe which have male flowers on diſtinct plants from the female, whoſe ſtamina join at their baſe.

The SPECIES are,

1. ADELIA (*Bernardia*) foliis oblongis tomentoſis ſerratis. Lin. Sp. Plant. 1473. *Adelia with oblong, woolly, ſawed leaves.*
2. ADELIA (*Ricinella*) foliis obovatis integerrimis. Lin. Sp. Plant. 1473. *Adelia, with oval entire leaves.*
3. ADELIA (*Acidoton*) ramis flexuoſis, ſpinis gemmaceis. Amœn. Acad. 5. 411. *Adelia with flexible branches and prickly gems.*

These plants grow naturally in the iſland of Jamaica, and are near a-kin to the Ricinus, or Croton, but the male flowers growing upon different plants from the female, has occaſioned their being ranged in a different claſs. Dr. Houſtoun conſtituted a genus of them by the title of Bernardia, in honour to Dr. Bernard de Juſſieu, demonſtrator of plants in the royal garden at Paris; but Dr. Linnæus has fixed the title of Adelia to them. The plants are propagated by ſeeds, when theſe can be procured from the countries where they grow, for they do not produce good ſeeds in England. The ſeeds muſt be ſown upon a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſeparate ſmall pot, filled with light earth, and plunged into a hot-bed of tan, treating them in the ſame manner as is hereafter directed for Croton. In the autumn, the pots ſhould be plunged into the tan-bed in the ſtove, where, if they are kept in a temperate heat in winter, and not over-watered during that ſeaſon, the plants may be preſerved, and the ſummer following will produce flowers; but as theſe have little beauty, the plants are ſeldom propagated except in botanic gardens.

ADENANTHERA. Prod. Leyd. 462. Baſtard Flower-fence.

The CHARACTERS are,

The empalement of the flower is of one leaf, ſlightly cut into five at the top; the flower is of the bell-ſhaped kind, and is compoſed of five petals, which are reflexed and concave on their under ſide. In the center is ſituated an oblong germen, ſupporting a ſtyle crowned with a ſingle ſtigma; this is attended by ten erect ſtamina of the ſame length, which are crowned with roundiſh ſummits; after the flower is paſt, the germen becomes a long compreſſed pod, containing many convex ſmooth ſeeds, placed at a diſtance from each other.

Dr. Linnæus ranges this genus of plants in the firſt ſection of his tenth claſs, entitled Decandria monogynia, the flowers having ten ſtamina and one germen; but he ſeparates it from the Poinciana, becauſe the petals of the flower are equal, and the empalement is of one leaf, whereas the Poinciana hath a five leaved empalement, and the petals are unequal.

ADENANTHERA foliis decompoſitis. Prod. Leyd. 462. *Baſtard Flower-fence with decompounded leaves.*

There is another ſpecies, or at leaſt a variety of this kind, with ſcarlet ſeeds, which is at preſent rare in this country. I received the ſeeds of it from India, from which many plants have been raiſed, but they are of very ſlow growth in England.

The ſort here mentioned grows to a very large tree in its native country, but it is ſo tender as to require a ſtove to preſerve it through the winter in England, ſo that there are no large plants in the Engliſh gardens at preſent; the young plants which are not more than two feet high, have large branching leaves, compoſed of many equal diviſions, garniſhed with ſmall oval leaves, which are placed alternately on the mid-rib, and are of a bright green colour. The ſtems of the plants are woody, the bark of a brown colour, and the leaves continue all the year; but I have not ſeen any flowers produced in England as yet, but by ſome dried ſamples which were brought from India, they

ſeem to be ſmall, and of little beauty; the fine branching leaves of the plant, however, make a very handſome appearance in the ſtove. The ſeeds are of a ſhining black colour, and are ſomewhat larger than thoſe of the great Lentil, and nearly of the ſame ſhape. This plant muſt be raiſed on a hot-bed, and afterwards placed in the bark-ſtove with other tender exotics.

ADHATODA. See JUSTICIA.

ADIANTHUM, i. e. Maidenhair.

The CHARACTERS are,

This genus is diſtinguiſhed from the other capillary plants by the fructification, being confuſedly joined in oval ſpots, and the points of the leaves reflexed.

The SPECIES are,

1. ADIANTHUM (*Capillus Veneris*) frondibus decompoſitis foliis alternis pinnis cuneiformibus lobatis pedicellatis. Lin. Sp. Plant. 1096. *The true Maidenhair.* Adianthum foliis Coriandri. C. B. P. 356.
2. ADIANTHUM (*Pedatum*) frondibus pedatâ foliolis pinnatis pinnis antice gibbis inciſis fructificantibus. Lin. Sp. Plant. 1095. *American Maidenhair.* Adianthum Americanum. Corn. Canad. 7. tab. 6.
3. ADIANTHUM (*Trapeziforme*) frondibus ſupradecompoſitis foliolis alternis, pinnis rhombeis inciſis utrinque fructificationibus. Lin. Sp. Plant. 1097. *The largeſt black American Maidenhair with branching ſtalks, and leaves ſhaped like the figure of a rhombus.*

There are many ſpecies of this genus, which are natives of the Eaſt and Weſt-Indies, greatly differing in ſize and form from each other. I have upwards of thirty diſtinct ſpecies in my collection of dried plants, which to enumerate in this place, would be ſuperfluous, as they have not been introduced into the Engliſh gardens. The three ſorts here mentioned, are all that I have ſeen growing in England.

The firſt ſort is the true Maidenhair, which is directed to be uſed in medicine; but as it does not grow naturally in England, ſo the Trichomanes is uſually ſubſtituted for it, which grows in great plenty in ſeveral parts of England. The other is a native of the ſouth of France, Italy, and the Levant, from whence I have received the plants. It uſually grows out of the joints of walls, and the fiſſures of rocks, ſo that whoever is inclinable to keep this plant in their gardens, ſhould plant it in pots filled with gravel and lime rubbiſh, in which it will thrive much better than in good earth; but the pots muſt be ſheltered under a frame in winter, otherwiſe the plants are often killed by the froſt.

The ſecond ſort is often preſerved in gardens for the ſake of variety; this may be preſerved in pots, and treated in the ſame manner as the former; for altho' it will live through the winter in the open air in moderate ſeaſons, yet in ſevere froſt it is ſometimes deſtroyed. This grows naturally in Canada in ſuch quantities, that the French ſend it from thence in package for other goods, and the apothecaries at Paris uſe it for the Maidenhair, in all their compoſitions in which that is ordered.

The third ſort grows naturally in very warm countries; I received it from Jamaica in a tub of earth among other plants. This ſort will not thrive in England, unleſs it be preſerved in a ſtove, where its ſhining black ſtalks and odd ſhaped leaves will afford an agreeable variety among other exotic plants.

ADNATA, ADNESCENTIA, are thoſe offſets, or ſmall bulbs, which are produced from the roots of bulbous plants, and are cloſely connected to the parent root; of this ſort is the Narciſſus, Amaryllis, Pancratium, &c.

ADONIDIS HORTI, i. e. the gardens of Adonis, are plants, flowers, &c. in pots or caſes, ſet on the outſide of windows, in balconies, &c.

ADONIS, or FLOS ADONIS, Bird's-eye, or Pheaſant's-eye.

The CHARACTERS are,

The empalement of the flower is compoſed of five concave, obtuſe, coloured leaves which fall off; the flower is compoſed in ſome ſpecies of five petals, and in others of twelve

or

or fourteen. In the center there are many germina collected in a head, which are attended by a great number of ſhort ſtamina, crowned by oblong inflexed ſummits; after the flower is paſt, the germina become ſo many naked ſeeds, cloſely adhering to the pedicle, and forming an obtuſe ſpike.

This genus is by Dr. Linnæus ranged in the ſeventh ſection of his thirteenth claſs, entitled Polyandria Polyginia, the flowers having many ſtamina and many germina.

The SPECIES are,

1. ADONIS (*Annua*) floribus octopetalis fructibus ſubcylindricis. Hort. Upſal. 156. *The common Adonis, or Flos Adonis, with ſmall red flowers.*
2. ADONIS (*Æſtivalis*) floribus pentapetalis fructibus ovatis. *Annual Adonis with pale yellow flowers.* Adonis Sylveſtris flore luteo foliis longioribus. C. B. P. 178.
3. ADONIS (*Vernalis*) flore dodecapetalo, fructu ovato. Lin. Sp. Plant. 771. *Perennial Adonis with yellow flowers, by ſome titled fennel-leaved black Hellebore.* Adonis Hellebori radice Buphthalmi flore. H. L.

There is a variety of the firſt ſort, which hath been long cultivated in the gardens; the flowers of this are larger, and the leaves ſhorter, than thoſe of the wild ſort; but, from many repeated trials of ſowing their ſeeds ſeparately, they appear to be only accidental variations ariſing from culture, and therefore may be properly eſteemed as ſuch.

The ſecond ſort is undoubtedly a diſtinct ſpecies. I have cultivated both theſe ſorts above thirty years, and have never obſerved the ſecond to vary either in the ſhape of its leaves, colour, make of the flower, or growth of the plants, which are much taller than the firſt, the leaves thinner, ſparingly ſet on the ſtalks, and of a lighter colour.

Both theſe ſorts are annual, and if the ſeeds are ſown in autumn, the plants will come up the following ſpring; but when the ſeeds are not ſown till ſpring, they rarely come up the ſame year: ſo that when the ſeeds are permitted to fall on the ground, they generally ſucceed better than when ſown by art. The firſt ſort grows naturally in Kent, particularly by the ſide of the river Medway, between Rocheſter and Maidſtone, where it is found in great plenty in the fields which are ſown with wheat; but in the intermediate years when the fields are ſown with ſpring corn, there is rarely a plant of it to be found, which ſhews the neceſſity of ſowing the ſeeds in autumn, for thoſe fields of ſpring corn, if ſuffered to remain undiſturbed after the harveſt, will abound with this plant the following year. For ſome years paſt, great quantities of the flowers of this plant have been brought to London, and ſold in the ſtreets by the name of Red Morocco. Both theſe annual ſorts flower in the beginning of June, and the ſeeds ripen in Auguſt and September; this muſt be underſtood of thoſe plants which ariſe from ſeeds ſown in autumn, or ſuch as have fallen to the ground; for when any plants come up from the ſeeds ſown in the ſpring (which ſometimes happen) they do not flower till July or Auguſt, and their ſeeds ſeldom ripen before October.

Theſe plants will thrive beſt in a light ſoil, but may be ſown in any ſituation, ſo that by ſowing ſome in a warm ſituation, and others in the ſhade, they may be continued longer in flower. The ſeeds ought to be ſown where the plants are to remain to flower, for they do not bear tranſplanting, eſpecially if they are not removed while the plants are very young: therefore they ſhould be ſown in ſmall patches in the borders of the flower garden, and when the plants come up, they ſhould be thinned, leaving three or four in each patch, which will make a better appearance than where they grow ſingle.

The third ſort hath a perennial root, and an annual ſtalk. This grows naturally on the mountains of Bohemia, Pruſſia, and other parts of Germany, where the root is often uſed as the true Black Hellebore, though from the deſcriptions given by the antients of that plant, this by no means will agree with them: this has been long cultivated in gardens. It produces its flowers the latter end of March, or the beginning of April, according to the forwardneſs of the ſeaſon: the ſtalks riſe about a foot and a half high, and when the roots are large, and have ſtood unremoved for ſome years, they will put out a great number of ſtalks from each: theſe are garniſhed with fine ſlender leaves, which are placed in cluſters at intervals. At the top of each ſtalk, is produced one large yellow flower, compoſed of an unequal number of petals, the center of which is occupied by a great number of germen, ſurrounded by many ſtamina; after the flowers drop, the germen become naked ſeeds, cloſely adhering to the foot-ſtalk, forming an obtuſe ſpike. Theſe ripen in Auguſt, and ſhould be ſown ſoon after, otherwiſe they ſeldom ſucceed.

When the plants come up, they muſt be carefully kept clean from weeds, and, in very dry weather, if they are now and then refreſhed with water, it will promote their growth. They ſhould remain in the place where they are ſown until the ſecond year, for they make but ſlow progreſs while young. The beſt time to tranſplant them is in autumn, when they ought to be planted where they are to remain, for if often removed, they will not produce many flowers, nor thoſe flowers be ſo ſtrong as on the plants which are unremoved.

ADOXA. Lin. Gen. 450. Moſchatellina. Tourn. Inſt. Tuberous Moſchatel, or Hollow Root. This is ranged in Linnæus's eighth claſs, entitled Octandria Tetragynia, the flower having eight ſtamina and four ſtyles.

The CHARACTERS are,

The empalement of the flower is bifid and permanent, upon which reſts the germen; the flower is of one leaf, which is cut into four acute ſegments. The germen is ſituated in the center, ſupporting four erect ſtyles, theſe are attended by eight ſtamina, crowned by roundiſh ſummits; after the flower is paſt, the germen becomes a round berry, reſting on the empalement, which hath four cells, each containing a ſingle compreſſed ſeed.

There is but one SPECIES of this genus.

ADOXA. Hort. Cliff. 152. *Bulbous Fumitory Hollow Root, or tuberous Moſchatel.* Radix cava minima viridi flore of Gerard.

This plant grows naturally in ſhady woods in divers parts of England: I have frequently gathered it on the top of Hampſtead among the buſhes, near the wood; it is a very low plant, ſeldom riſing more than four or five inches high, the leaves reſemble thoſe of the bulbous Fumitory, the flower-ſtalk ariſes immediately from the root, upon the top of which is placed four or five ſmall flowers of an herbaceous white colour; theſe appear the beginning of April, and the berries ripen in May, ſoon after which the leaves decay. There is little beauty in this plant, but as ſome perſons are fond of collecting the ſeveral kinds of plants in their gardens, which are not commonly found, it is mentioned here. The roots may be tranſplanted any time after the leaves are decayed, till winter; theſe are tuberous, and ſhaped ſomewhat like a tooth. They muſt be planted in the ſhade, under ſhrubs; for if they are expoſed to the open ſun, they will not thrive. The leaves and flowers ſmell like Muſk, from whence it has been by ſome called Muſk-Crowfoot.

ÆGILOPS, Wild Feſtuc, a ſort of graſs which grows naturally in many parts of Europe, ſo is rarely cultivated except in botanic gardens.

ÆGOPODIUM, Small Wild Angelica, or Goutwort; this plant grows naturally in ſeveral places near London, but the roots run ſo faſt in a garden, as to render it a troubleſome weed.

ÆSCHYNOMENE. Lin. Gen. Plant. 769. Baſtard Senſitive plant.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, entitled Diadelphia decandria; the flowers of this claſs have ten ſtamina, nine of which are united, and the other is ſeparate.

The CHARACTERS are,

The empalement of the flower conſiſts of one leaf, cut into two equal ſegments, the upper being bifid, and the

flower trifid; the flower is of the butterfly kind, the ſtandard being large and heart-ſhaped; the two wings are oval, and ſhorter than the ſtandard; the keel is moon-ſhaped, and as long as the ſtandard. In the bottom of the flower is ſituated an oblong hairy germen, ſupporting an arched ſtyle, attended by ten ſtamina, nine of which coaleſce, and the other is ſeparated from them; after the flower is paſt, the germen becomes a long, plain, jointed pod, which ſeparates at the joints, in each of which is lodged one kidney-ſhaped ſeed.

The SPECIES are,

1. ÆSCHYNOMENE (*Aſpera*) caule ſcabro leguminum articulis medio ſcabris. Lin. Sp. Plant. 713. *Baſtard Senſitive plant with a rough ſtalk, and a jointed pod.* Mimoſa non ſpinoſa major Zelanica. Breyn. Cent. 51.
2. ÆSCHYNOMENE (*Americana*) caule herbaceo hiſpido, foliolis acuminatis, leguminum articulis ſemicordatis, bracteis ciliatis. Lin. Sp. Plant. 1061. *Baſtard Senſitive plant with a ſtinging herbaceous ſtalk; pointed leaves, and the joints of the pods heart-ſhaped.* Hedyſarum caule hirſuto mimoſæ foliis alatis, pinnis acutis minimis gramineis. Sloan. Cat. Jam.
3. ÆSCHYNOMENE (*Arborea*) caule lævi arboreo leguminum articulis ſemicordatis glabris. Prod. Leyd. 384. *Baſtard Senſitive plant with a ſmooth tree-like ſtalk, and ſmooth jointed pods.* Seſban caule ſimplici glabro, foliis pinnatis glabris. Monier.
4. ÆSCHYNOMENE (*Seſban*) caule herbaceo lævi, foliolis obtuſis, leguminibus cylindricis æqualibus. Lin. Sp. Plant. 1061. *Baſtard Senſitive plant with a ſmooth ſtalk, obtuſe leaves, and equal cylindrical pods.* Galega Egyptiaca ſiliquis articulatis. C. B. P. 352.
5. ÆSCHYNOMENE (*Pumila*) caule herbaceo lævi, foliolis acuminatis, leguminibus hinc ſerratis medio ſcabris. Lin. Sp. Plant. 1061. *Baſtard Senſitive plant, with a ſmooth herbaceous ſtalk, pointed leaves, and ſerrated rough pods.* Hedyſarum annuum minus Zeylanicum mimoſæ foliis. Inſt. R. H. 402.
6. ÆSCHYNOMENE (*Grandiflora*) caule arboreo, floribus maximis, leguminibus filiformibus. Lin. Sp. Plant. 1060. *Baſtard Senſitive plant with a tree-like ſtalk, large flowers, and ſlender pods.* Galegæ affinis malabarica arboreſcens, ſiliquis majoribus umbellatis. Raii Hiſt. 1734.

The firſt ſort riſes to the height of four or five feet, having a ſingle herbaceous ſtalk, which is in ſome parts rough. The leaves come out on every ſide toward the top, forming a ſort of head; theſe are compoſed of a great number of ſmall leaves (or pinnæ) which are ſmooth, and of a glaucous colour. The flowers come out from between the leaves, two or three together upon long foot-ſtalks; they are yellow, and ſhaped like thoſe of Peaſe. After the flower is paſt, the germen becomes a flat jointed pod, about four inches long, which, when ripe, parts at the joints, and in each diviſion is lodged a ſingle kidney-ſhaped ſeed.

The ſecond ſort ſeldom riſes more than two feet high, but ſends out three or four lateral branches; theſe are clothed with narrow winged leaves, whoſe pinnæ are placed alternate on the midrib. The flowers come out from the leaves upon branching foot-ſtalks, five or ſix together; theſe are much leſs than thoſe of the firſt ſort, and of a paler yellow colour. After the flowers are paſt, the germen becomes a jointed pod, having three or four ſwelling diviſions, in each of which is lodged a ſingle kidney-ſhaped ſeed.

The third ſort grows to the height of ſix or ſeven feet, with a ſingle ſtem; the leaves are ſmooth, and come out towards the top of the ſtalk, as in the firſt ſort they are compoſed of many pinnæ, placed alternate on the midrib. The flowers come out from the wings of the leaves, two or three together, being of a copper colour, and as large as thoſe of the firſt ſort. After the flowers are paſt, the germen becomes a ſmooth jointed pod, each diviſion being half heart-ſhaped, and incloſing a ſingle kidney-ſhaped ſeed.

The fourth ſort grows naturally in Egypt, and alſo on the coaſt of Guinea, from whence I received the ſeeds. This hath woody ſtems and branches, which are garniſhed with ſmooth leaves, compoſed of many blunt pinnæ, ſet by oppoſite pairs; the flowers, which are ſmall, and of a deep yellow colour, come out from the wings of the leaves in long ſpikes, which hang downward. After the flower is paſt, the germen becomes a taper-pointed ſmooth pod, not jointed.

The fifth ſort riſes about three feet high, with a ſingle herbaceous ſtalk, ſeldom putting out any ſide branches. The flowers come out from the wings of the leaves, ſometimes ſingle, and other times two or three upon each foot-ſtalk; theſe are ſmall, and of a pale yellow colour. After the flower is paſt, the germen becomes a long falcated pod, divided into eleven, or thirteen partitions, each containing a ſingle kidney-ſhaped ſeed.

The ſixth ſort riſes ſix or eight feet high, with a woody ſtem, ſending out branches towards the top, garniſhed with obtuſe leaves; the flowers are large, yellow, and ſucceeded by large pods, including kidney-ſhaped ſeeds.

The firſt, third, and fourth ſorts, will live through the winter in England, if placed in a warm ſtove; but as their ſtalks are ſucculent, they muſt be kept dry in winter, otherwiſe they are very ſubject to rot. They ſhould be plunged into the tan-bed, for when put into a dry ſtove, the fibres of their roots ſoon grow dry, and their leaves hang and fade, which ſhews their want of moiſture; but when they have water given them, it cauſes the tender fibres of their roots to periſh, and the plants ſoon after decay.

The fifth ſort is annual, therefore the ſeeds ſhould be ſown early in March on a hot-bed, and the plants ſhould be brought forward in the ſpring, and afterwards placed in an airy glaſs-caſe, or a ſtove in ſummer, for if they are expoſed to the open air, the ſeeds rarely ripen in England.

The ſixth ſort grows to a large ſhrub in hot countries, but is with difficulty preſerved through the winter in this country. The plants are propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring, and the plants, when fit to remove, ſhould be planted in pots, and brought forward on a hot-bed, then ſhould be plunged into the bark-bed in the ſtove, where, if they are tenderly treated, they will live through the winter, and flower the ſummer following.

Theſe are all propagated by ſeeds, which ſhould be ſown on a hot-bed early in the ſpring, and when the plants have ſtrength enough to be removed, they ſhould be put each into a ſeparate ſmall pot, filled with light earth, and plunged into a freſh hot-bed, to bring them forward; and as they advance in their growth, they ſhould be ſhifted into large pots, but great care ſhould be taken not to over-pot them, for if the pots are too large, the plants will not thrive.

The firſt, ſecond, and fifth ſorts are annual, therefore muſt be brought forward early in the year, otherwiſe they will not perfect their ſeeds; but the third, fourth, and ſixth ſorts may be preſerved through the winter, and will flower early the following ſummer, and their ſeeds will ripen in the autumn. The other ſorts uſually flower in July, and their ſeeds ripen in October.

ÆSCULUS. Lin. Gen. 420. The Horſe Cheſtnut.

The CHARACTERS are,

The empalement of the flower conſiſts of one leaf, ſlightly cut into five ſegments. The flower is compoſed of five roundiſh petals, folded at their border, and waved; theſe are narrow at their baſe, and are inſerted in the empalement. In the center is placed a roundiſh germen, having a ſingle ſtyle, crowned with a pointed ſtigma, attended by ſeven ſtamina, which extend to the length of the petals, and are declining, crowned with upright ſummits. When the flower is paſt, the empalement becomes a thick, roundiſh, echinated capſule, opening into three cells, in one or two of which are lodged globular ſeeds.

This genus of plants, is, by Dr. Linnæus, ranged in his ſeventh claſs, entitled Heptandria Monogynia, the flower having ſeven ſtamina and one ſtyle.

The SPECIES are,

1. ÆSCULUS (*Hippocaſtanum*) floribus heptandriis. Hort. Upſal. 92. *The common Horſe Cheſtnut.* Hippocaſtanum

num vulgare. Tourn. Inſt. Caſtanea equini. Cluſ. Hiſt. 1. p. 7.

2. Æsculus (*Pavia*) floribus octandris. Lin. Sp. 488. *Scarlet Horſe Cheſtnut*. Pavia. Boerh. Ind. Alt. 2. p. 260. The Horſe Cheſtnut was brought from the northern parts of Aſia about the year 1550, and was ſent to Vienna about the year 1588. It was called Caſtanea from the ſhape of its fruit, and the title of Equini was added to it from its being a good food for horſes when ground.

This tree was in much greater eſteem formerly than at preſent, for ſince it is become ſo very common, few perſons regard it. What has occaſioned its being ſo ſeldom planted, is the decay of the leaves early in ſummer; ſo that where they are growing in gardens, their leaves frequently begin to fall in July, and occaſion a litter from that time, until all the leaves are fallen; but notwithſtanding this inconvenience, the tree has great merit, for it affords a noble ſhade in ſummer; and during the time of its flowering, there is no tree has greater beauty, for the extremity of the branches are terminated by fine ſpikes of flowers, ſo that every part of the tree ſeems covered with them; which are finely ſpotted with a roſe colour, and theſe being intermixed with the green leaves make a noble appearance.

The former method of planting theſe trees in avenues and ſtrait lines, has alſo been in ſome meaſure the occaſion of their preſent diſrepute, becauſe in ſuch plantations great part of their beauty is loſt; for when their branches are ſo far extended as to nearly meet, moſt of the flowers which are produced are hid from ſight, and as the trees grow larger, their branches will interfere with each other, and produce few flowers; the leaves will alſo decay much ſooner in cloſe plantations, than on ſingle trees: therefore the great beauty of them is, to ſtand ſingly at a diſtance from all other trees, upon lawns of graſs in parks, where their fruit will be of great ſervice to deer, who are very fond of them. In ſuch ſituations, when the trees are grown to a good ſize, there is not a finer object than they will afford during their ſeaſon of flowering, which is in May, and when the weather is moderate, they will continue in beauty near a month.

As this tree is quick in its growth, ſo in a few years they will arrive to a ſize large enough to afford a good ſhade in ſummer, as alſo to produce plenty of flowers. I have known trees which were raiſed from nuts, in twelve or fourteen years, large enough to ſhade two or three chairs under the ſpread of their branches, and have been covered with flowers in the ſeaſon, ſo that few trees make greater progreſs than theſe. But as their wood is of little value, the trees ſhould not be propagated in too great plenty: a few therefore of them placed at proper diſtances in parks for ornament is as many as ſhould be preſerved, the wood not being fit even for burning, nor any other uſe that I know of.

Theſe trees are propagated by ſowing the nuts; the beſt time for doing this is early in the ſpring; but the nuts ſhould be preſerved in ſand during the winter, otherwiſe they are apt to grow mouldy and rot. They may indeed be planted in autumn, but then they will be in danger of rotting if the winter ſhould prove very wet, as alſo of being removed or eaten by vermin.

When the nuts ſucceed, and have a proper ſoil, the plants will ſhoot near a foot the firſt ſummer; ſo that where they grow pretty cloſe together, it will be proper to tranſplant them the following autumn, when they ought to be planted in rows at three feet diſtance, and one foot aſunder in the rows: in this nurſery they may remain two years, by which time they will be fit to plant where they are deſigned to be continued; for the younger theſe trees are planted out, the larger they will grow. But there are many who will object to their being planted out young in parks, becauſe they will require a fence to ſecure them againſt the cattle; which will alſo be neceſſary, whatever ſize they are when planted; and if large, they muſt be well ſtaked to prevent their being diſplaced by ſtrong winds: which is another expence, and when we conſider how much faſter a young tree will grow, than thoſe which are removed at a greater age, there can be no excuſe for planting large trees.

This tree is not very nice in its culture, for it requires little care in the management, and will thrive in moſt ſoils and ſituations, but in a ſandy loam they make the greateſt progreſs; and if the ſoil be inclining to moiſture, the leaves will continue in verdure much longer, than in very dry ground.

When theſe trees are tranſplanted, their roots ſhould be preſerved as entire as poſſible, for they do not ſucceed well, when torn or cut; nor ſhould any of the branches be ſhortened, for there is ſcarce any tree, which will not bear amputation better than this; ſo that when any branches are by accident broken, they ſhould be cut off cloſe to the ſtem, that the wound may heal over.

There is ſomething very ſingular in the growth of theſe trees, which is the whole ſhoot being performed in leſs than three weeks, after the buds are opened; in which time I have meaſured ſhoots a foot and a half long, with their leaves fully expanded: and no ſooner are the flowers fallen, than the buds for the ſucceeding year are formed, which continue ſwelling till autumn; at which time the folding covers are ſpread over with a thick tenacious juice, which ſerves as a pigment to defend the tender buds from the froſt and rain in winter; but upon the firſt return of warmth in the ſpring, this melts and runs off, whereby the bud is at full liberty to extend. And what is remarkable in this pigment, it is never ſo far hardened as to injure the tender buds, which are always formed at the extremity of the former year's ſhoot; a plain direction not to ſhorten them, for by ſo doing, the future ſhoots are entirely cut off.

In Turkey the nuts of this tree are ground, and mixed with the provender for their horſes, eſpecially thoſe which are troubled with coughs, or are broken winded; in both which diſorders, they are accounted very good. Deer are very fond of the fruit, and at the time of their ripening will keep much about the trees, but eſpecially in ſtrong winds, when the nuts are blown down, which they carefully watch, and greedily devour as they fall.

There are ſome old trees now ſtanding, which were planted ſingle, at a great diſtance from any other; theſe are grown to a very large ſize, and their heads form a natural parabola, and when their flowers are in full beauty, there is not any tree yet known in Europe, which makes ſo fine an appearance. I have meaſured ſome of theſe trees, whoſe branches have extended more than thirty feet in diameter, and their heads have been ſo cloſe, as to afford a perfect ſhade in the hotteſt ſeaſons. Theſe were planted in 1679, as appears by ſome writings which are in the poſſeſſion of the perſons, who have now the property of the land where they grow: ſo that although they are of quick growth, yet they are not of ſhort duration.

The Scarlet Horſe Cheſtnut grows naturally in North America, where it riſes to the height of twenty feet, but does not ſpread its branches to any great extent, the flowers are wholly red, which are much ſmaller than thoſe of the common ſort, they are tubulous, but want brims to expand, ſo make but an indifferent appearance, when compared to the other: however for variety this ſhould have a place in gardens.

It may be propagated by the nuts, if they are procured from the country where the trees naturally grow; for the ſeaſons are ſeldom favourable enough to ripen them in England. The nuts ſhould be ſown in pots early in the ſpring, and the pots plunged into a moderate hot-bed to forward their growth; toward the end of May, the pot ſhould be plunged into the ground in a ſouth-eaſt border, and in dry weather the plants ſhould be duly watered, whereby they will acquire ſtrength by the autumn; when it will be very proper to ſcreen the plants from early froſts which often pinch the top buds, and occaſion their decay in the winter, for while the plants are young they are impatient of froſts, but when they have obtained

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ſtrength it ſeldom hurts them: the ſpring following the plants ſhould be carefully ſeparated and planted a foot diſtance from each other in a ſheltered ſituation; and the following winter, if it proves cold, it will be proper to cover the plants with ſome light covering to protect them; after the ſecond winter they will require no farther ſheltering.

The common method now practiſed by the nurſerymen, who propagate theſe trees for ſale, is by grafting or budding them upon ſtocks of the Horſe Cheſtnut, but as the ſtocks greatly out-grow the buds or grafts, they have a bad appearance; nor do the trees laſt long.

ÆTHER [of αἴθειν, *Gr.* to burn or flame; ſome of the antients having ſuppoſed it to be of the nature of fire.] It is uſually underſtood to be a thin ſubtile matter or medium, much finer and rarer than air itſelf, which commences from the limits of the atmoſphere, and poſſeſſes the whole heavenly ſpace. See ATMOSPHERE and AIR.

AGAVE, Lin. Gen. 390. American Aloe.

The CHARACTERS are,

The flower has no empalement, is funnel-ſhaped, and of one leaf, which is cut at the brim into ſix equal ſegments; the oblong germen is ſituated below the flower, upon which reſts the ſlender ſtyle, which is extended a conſiderable length beyondthe petals, and is crowned by a three cornered ſtigma. This is attended by ſix erect ſtamina, of the ſame length, crowned by narrow ſummits; after the flower is paſt, the germen becomes an oblong three cornered ſeed veſſel, having three cells, which are filled with flat ſeeds.

Dr. Linnæus has ſeparated the plants of this genus from the Aloe, to which they had been joined by former botaniſts, becauſe the ſtamina and ſtyle in theſe flowers are extended much longer than the corolla, and the corolla reſt upon the germen, which in the Aloe are not ſo. We may alſo mention another difference in the growth of the plants, by which they may be diſtinguiſhed before they flower; which is, all the plants of this genus have their center leaves cloſely folding over each other, and embracing the flower ſtem which is formed in the center; ſo that theſe never flower until all the leaves are expanded, to give the ſtem its liberty to advance, and when the flower is paſt, the plants die. Whereas the flower-ſtem of the Aloe, is produced on one ſide of the heart or center of the plant, ſo they flower annually, and the leaves are always more expanded, than thoſe of this genus.

The SPECIES are,

1. AGAVE (*Americana*) foliis dentato-ſpinoſis ſcapo ramoſo. Gen. Nov. 1102. *The Great American Aloe, with a branching ſtalk.* Aloe Americano muricata. J. B.
2. AGAVE (*Virginia*) foliis dentato-ſpinoſis ſcapo ſimpliciſſimo. Lin. Sp. Plant. 323. *American Aloe with a ſimple ſtalk.*
3. AGAVE (*Fœtida*) foliis integerrimis. Gen. Nov. Sp. Pl. 323. *American Aloe with ſtiff whole leaves.* Aloe Americana viridi rigidiſſimo & fœtido folio piet dicta indigenis. Hort. Amſt. 2. p. 35.
4. AGAVE (*Tuberoſa*) radice tuberosâ foliis longiſſimis marginibus ſpinoſis. *American Aloe, with a tuberous root and very long leaves, with ſpines on their edges.* Aloe Americana radice tuberosâ minor. Pluk. Alm. 19.
5. AGAVE (*Vivipara*) foliis reflexis, marginibus dentatis. *American Aloe with reflexed leaves, whoſe edges are indented.* This is by ſome called the Childing Aloe, from its producing young plants after the flowers. Aloe Americana ſobolifera. Herm. H. Ludg. 16.
6. AGAVE (*Karatto*) foliis erectis lætè virentibus, marginibus fuſcis minimè ſerratis. *American Aloe with long deep green leaves, edged with brown, and very ſlightly ſawed.* This is called in America Karattò.
7. AGAVE (*Vera Cruz*) foliis oblongis marginibus ſpinoſiſſimis nigricantibus. *American Aloe with oblong leaves, whoſe edges are cloſely beſet with black ſpines, commonly called Broad-leaved Aloe from Vera Cruz.* Aloe Americana ex Verâ Cruce foliis latioribus & glaucis. H. L.
8. AGAVE (*Rigida*) foliis lineari-lanceolatis integerrimis rigidis aculeo terminatis. *Narrow-leaved Aloe from Vera Cruz.* Aloe Americana ex Verâ Cruce foliis anguſtioribus minùs glaucis. Hort. Beam.

The firſt ſort here mentioned, has been long preſerved in the Engliſh gardens, where of late years there have been ſeveral of the plants in flower. The ſtems of this when the plants are vigorous, generally riſe upward of twenty feet high, and branch out on every ſide, ſo as to form a kind of pyramid, the ſlender ſhoots being garniſhed with greeniſh yellow flowers, which ſtand erect, and come out in thick cluſters at every joint. Theſe have ſix long ſtamina, crowned with yellow ſummits, placed round the ſtyle, which is alſo extended to the ſame length as the ſtamina. After the flowers fall away, the germen, which is ſituated beneath the flower, becomes an oblong triangular veſſel, divided into three cells, filled with compreſſed ſeeds; but theſe do not come to maturity in England.

When theſe plants flower, they make a fine appearance, and continue a long time in beauty, if they are protected from the cold in autumn, as there will be a ſucceſſion of new flowers produced, for near three months, in favourable ſeaſons. It has been generally believed, that this plant doth not flower until it is a hundred years old; but this is a great miſtake, for the time of its flowering depends on the growth of the plants; ſo that in hot countries where they grow faſt, and expand many leaves every ſeaſon, they will flower in a few years, but in colder climates, where their growth is ſlow, it will be much longer before they ſhoot up their ſtem. There is a variety of this ſort with ſtriped leaves, which is now pretty common in the Engliſh gardens.

The plants of the ſecond ſort are ſo like thoſe of the firſt, as not to be diſtinguiſhed from them, but by good judges. The principal difference is, the leaves of this are narrower toward their extremity, and of a paler colour: the ſtems of this ſort do not riſe ſo high as the firſt, nor do they branch in the ſame manner, but the flowers are collected into a cloſe head at the top, they are however of the ſame ſhape and colour. There has been three or four plants of this ſort, which have lately flowered in England, one of which was in the Chelſea garden a few years paſt. This ſort ſeldom puts out ſo many offſets as the common Aloe.

The ſeventh ſort greatly reſembles theſe, ſo that many perſons have ſuppoſed it to be the ſame; but the leaves of this are much thinner, the indentures on their edges abundantly cloſer, and not ſo deep, as in either of the former; the ſpines too are blacker. How this differs from the others in flower I know not, having ſeen none of their flowers produced in England. Theſe three ſorts are hardy. I have known plants of the firſt ſort live in the open air for ſome years in mild ſeaſons, but in ſevere winters they are always killed, if not ſheltered. They are propagated by offſets, which the firſt ſort ſends out in plenty, but the third ſeldom puts out any; ſo theſe may be increaſed by taking off ſome of the larger roots, at the time when the plants are ſhifted, planting them in pots filled with light ſandy earth, which will ſhoot out and become good plants, as I have experienced. The ſecond ſort generally puts out ſuckers enough for propagation, though not in ſo great plenty as the firſt. All theſe ſhould be planted in pots filled with light ſandy earth, and houſed in winter with oranges, myrtles, &c. and during that ſeaſon, ſhould have but little wet. In the ſummer they muſt be placed abroad in the open air, where they may remain till toward the end of October, when they ſhould be houſed again. The ſeventh ſort being a little tenderer than the other two, ſhould be put into the green-houſe before them, and may ſtay there a little longer in the ſpring. The third ſort hath long narrow ſtiff leaves, of a pale green colour, not indented on their edges, but frequently a little waved: the ſide leaves ſpread open, but thoſe in the center fold cloſely over each other, and ſtrictly ſurround the bud. The plants of this ſort rarely grow more than three feet high, but the flower-ſtem riſes near twenty, and branches out much like

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that of the firſt, but more horizontally; the flowers are of the ſame ſhape, but ſmaller, and of a greener colour. After the flowers are paſt, inſtead of ſeed-veſſels, young plants ſucceed to every flower, ſo that all the branches are cloſely beſet with them. There was a plant of this kind which flowered in the Chelſea garden 1755, the ſtem of which begun to ſhoot the beginning of October, and by the end of that month was upwards of ten feet high, by the end of November it was near twenty, and the lower lateral branches were upward of four feet long, the others decreaſing gradually, ſo as to form a regular pyramid. In December the ſtalks were cloſely garniſhed with flowers, and in the ſpring, when the flowers dropped off, they were ſucceeded by young plants, which as they fell off and dropped into the pots which ſtood near, put out roots and become good plants. This ſort never produces offsets from the root, ſo that it cannot be increaſed but when it flowers, at which time there will be plenty enough. The old plant preſently after dies.

The fourth ſort hath leaves ſomewhat like the third in ſhape and colour, but they are indented on their edges, and each indenture terminates in a ſpine; the root of this ſort is thick, and ſwells juſt above the ſurface of the ground, in other reſpects it agrees with the former. This ſort hath not flowered in England, therefore I cannot tell how it differs in its flowers from the other. I have raiſed this from ſeeds which were ſent me from America, but the plants never put out ſuckers from the roots, ſo that it can only be propagated by ſeeds. Dr. Linnæus ſuppoſes it to be the ſame with the third ſpecies, but whoever ſees the plants will not doubt of their being different.

The fifth ſort never grows to a large ſize; the leaves of it are ſeldom more than a foot and a half long, and about two inches and a half broad at their baſe; theſe end in a ſlender ſpine, being ſlightly indented on their edges; they are alſo reflexed backward toward their extremity, and are of a dark green colour. The flower-ſtem riſes about twelve feet high, and branches out toward the top in the ſame manner as the third ſort; the flowers are nearly of the ſame ſize and colour as thoſe of the third, and after they fall off, are ſucceeded by young plants in the ſame manner. A plant of this kind flowered in the garden at Chelſea, in December 1754. This never produces any ſuckers from the root, ſo cannot be increaſed until it flowers.

The leaves of the ſixth ſort are from two feet and a half to three feet long, and about three inches broad, being of a dark green colour, ending in a black ſpine; the borders of the leaves are of a browniſh red colour, and ſlightly ſerrated. Theſe ſtand more erect than in the other ſpecies; but as this ſort hath not flowered in England, ſo I cannot ſay how it differs from the other. The plants of it were ſent me from St. Chriſtopher's, by the title of Koratto, which I ſuppoſe is given indifferently to other ſpecies of this genus; for I have frequently heard the inhabitants of America call the common great Aloe by the ſame name.

The eighth ſort hath long, narrow, ſtiff leaves, which are entire, and are terminated by a ſtiff black ſpine. Theſe leaves are ſeldom more than two feet long, and little more than an inch broad, being of a glaucous colour. The ſide leaves ſtand almoſt horizontally, but the center leaves are folded over each other, and incloſe the flower-bud. This ſort never puts out ſuckers from the root, nor have I ſeen any plants of this kind in flower, although there are many of them in the Engliſh gardens, ſome of which are of a conſiderable age.

The third, fourth, fifth, ſixth, and eighth ſorts, are much tenderer than the others, ſo cannot be preſerved through the winter in England, unleſs they are placed in a warm ſtove; nor will they thrive if ſet abroad in ſummer, therefore they ſhould conſtantly remain in the ſtove, obſerving to let them enjoy a great ſhare of free air in warm weather. They require a light ſandy earth, and ſhould have little wet in winter; but in warm weather, may be gently watered twice a week, which is as often as is neceſſary; for if they have much water given them, it rots their roots, and then their leaves will decay and inſects infeſt them. They ſhould be ſhifted every ſummer into freſh earth, but muſt not be put into large pots, for unleſs their roots are confined, the plants will not thrive.

AGERATUM. Lin. Gen. Plant. 842. Baſtard Hemp Agrimony.

The CHARACTERS are,

The flowers are included in one common oblong empalement, which is compoſed of many ſcales. Theſe are uniform, tubulous, and hermaphrodite, and little longer than the empalement, each being cut at their margin into five ſegments, which ſpread open. Theſe have five ſlender ſtamina, crowned with cylindrical ſummits: in the center of the flower is ſituated an oblong germen, ſupporting a ſlender ſtyle, crowned by two fine ſtigmas. The germen afterward becomes an oblong angular ſeed, crowned with its proper little cup, cut into five narrow ſegments, which ſpread open. The receptacle of the ſeed is ſmall, naked, and convex.

This genus of plants is by Dr. Linnæus ranged in his ſeventeenth claſs, entitled Syngeneſia polygamia æqualis, the flowers having their ſtamina joined together in a cylinder, and there being male, female, and hermaphrodite florets included in the ſame common empalement.

The SPECIES are,

1. AGERATUM (*Conyzoides*) foliis ovatis caule piloſo. Lin. Sp. Plant. 839. *Baſtard Hemp Agrimony, with oval leaves and a hairy ſtalk.* Eupatorium humile Africanum ſenecionis facie folio lamii. Herm. Pars 161.
2. AGERATUM. (*Houſtonianum*) foliis oppoſitis petiolatis crenatis, caule hirſuto. *Baſtard Hemp Agrimony, with leaves having long ſtoot-ſtalks placed oppoſite, whoſe edges are bluntly indented, and a hairy ſtalk.* Eupatorium herbaceum meliſſæ folio villoſum flore cœruleo. Houſt. MSS.
3. AGERATUM (*Altiſſimum*) foliis ovato cordatis rugoſis floralibus alternis, caule glabro. Lin. Sp. Plant. 839. *Baſtard Hemp Agrimony, with rough, oval, heart-ſhaped leaves, flower branches growing alternate, and a ſmooth ſtalk.* Eupatorium urticæ foliis Canadenſe flore albo. H. L.

The two firſt are annual plants. The ſeeds of theſe muſt be ſown on a hot-bed in the ſpring, and when the plants are come up and are ſtrong enough to remove, they ſhould be tranſplanted into another moderate hot-bed, obſerving to water and ſhade them until they have taken root, after which time they muſt have a good ſhare of air in warm weather. In June they ſhould be inured to bear the open air, toward the middle of which month, they may be tranſplanted into the full ground, where they will begin to flower in July, and continue flowering till the froſts in autumn deſtroy them. The ſeeds ripen in September and October, and when any of them ſcatter upon the ground, and the ſame earth happens to be put on a hot-bed the following ſpring, the plants will come up in great plenty, as they frequently do in the open air; but theſe plants will be too late to produce good ſeeds, unleſs the ſummer proves warm. The firſt ſort grows naturally in Africa, and alſo in the iſlands of America; for in tubs of earth which I received with plants from Jamaica, Barbadoes, and Antigua, I have had plenty of the plants ariſe, from ſeeds which were ſcattered on the ground. The ſecond ſort was found growing naturally at La Vera Cruz, by the late Dr. William Houſtoun, who ſent the ſeeds to Europe, which have ſo well ſucceeded in many gardens, as to become a weed in the hot-beds. There is a variety of this with white flowers, which ariſes from the ſame ſeeds.

The third ſort grows naturally in North America, but has been many years an inhabitant of the Engliſh gardens. This hath a perennial root and an annual ſtalk; the ſtalks will grow five or ſix feet high, and toward their tops put out ſide branches: the leaves are ſhaped like a heart. At the ends of the ſhoots the flowers are produced in large tufts, which are of a pure white; and

theſe appearing in October, at a ſeaſon when there is a ſcarcity of other flowers, renders it more valuable.

This ſort is propagated by ſeeds, as alſo by parting of the roots; the latter method is commonly practiſed in England, becauſe there are few autumns ſo favourable as to ripen the ſeeds: but the ſeeds are frequently brought from North America, where this plant is very common; for being light, they are eaſily wafted about to a great diſtance, where they come to maturity; ſo that where there are any plants growing, all the adjoining land is filled with the ſeeds of them.

The beſt time for planting and tranſplanting the roots of this plant, is in autumn, ſoon after their ſtalks decay, that they may have good root before the drying winds come on, otherwiſe they will not flower ſtrong, or make a good increaſe. The roots ſhould be allowed three feet room every way, for as they ſpread and increaſe very much, ſo when they are cramped for room, the plants ſtarve, and in dry ſeaſons their leaves will hang. They delight in a rich moiſt ſoil and open ſituation, where they will produce many ſtalks from each root, which will grow ſo large as to form a conſiderable bruſh. This plant will bear the ſevereſt cold in winter.

AGERATUM, or MAUDLIN. See ACHILLEA.

AGERATUM PURPUREUM. See ERINUS.

AGNUS CASTUS. See VITEX.

AGRIFOLIUM. See ILEX.

AGRIMONIA. Lin. Gen. Plant. 534. Agrimony.

The CHARACTERS are,

The empalement of the flower is of one leaf, which is cut into five acute ſegments, and reſts on the germen. The flower has five petals, which are plain and indented at their extremity, but are narrow at their baſe, where they are inſerted in the empalement. In the center ariſes a double ſtyle, reſting on the germen, which is attended by twelve ſlender ſtamina, which are crowned with double compreſſed ſummits. After the flower is paſt, the germen becomes two roundiſh ſeeds faſtened to the empalement.

This genus of plants is ranged by Dr. Linnæus in the ſecond ſection of his eleventh claſs, entitled Dodecandria digynia, the flowers having twelve ſtamina and two ſtyles.

The SPECIES are,

1. AGRIMONIA (*Eupatoria*) foliis caulinis pinnatis impari petiolato, fructibus hiſpidis. Hort. Cliff. *The common Agrimony.* Agrimonia officinarum. Tourn.
2. AGRIMONIA (*Minor*) foliis caulinis pinnatis, foliolis obtuſis dentatis. *The white Agrimony.* Agrimonia minor flore albo. Hort. Cath.
3. AGRIMONIA (*Odorata*) altiſſima, foliis caulinis pinnatis foliolis oblongis acutis ſerratis. *The ſweet-ſcented Agrimony.* Agrimonia odorata. Camer.
4. AGRIMONIA (*Repens*) foliis caulinis pinnatis, impari ſeſſili, fructibus hiſpidis. Lin. Sp. 643. *Eaſtern Agrimony with pinnated leaves and a thick creeping root.* Agrimonia orientalis humilis radice craſſiſſimâ repente fructu in ſpicam brevem & denſam congeſto. Tourn. Cor.
5. AGRIMONIA (*Agrimonoides*) foliis caulinis ternatis fructibus glabris. Hort. Cliff. 179. *Three leaved Agrimony with ſmooth fruit.* Agrimonoïdes Col. Echpr.

The firſt ſort grows naturally in ſeveral parts of England, by the ſides of hedges, and in woods. This is the ſort which is commonly uſed in medicine, and is brought to the markets by thoſe who gather herbs in the fields.

The ſecond ſort is the ſmalleſt of all the ſpecies; the leaves of this have not ſo many pinnæ as the common ſort, and the pinnæ are rounder, and the indentures on their edges blunter. The ſpike of flowers is ſlender, and the flowers ſmaller, and of a dirty white colour. This ſort grows naturally in Italy, from whence I received the ſeeds, and have conſtantly found that the ſeeds of this when ſown never vary.

The third ſort grows near four feet high; the leaves of this have more pinnæ than either of the former, which are longer and narrower, ending in acute points; the ſerratures of the leaves are ſharper than any of the other, and when handled emit an agreeable odour. The leaves of this ſort make an agreeable cooling tea, which is a very good beverage for perſons in a fever, in which diſorder I have known it often preſcribed by good phyſicians.

The fourth ſort is of humble growth, ſeldom riſing above two feet high; the pinnæ of its leaves are longer and narrower than either of the former, and the ſpikes of flowers very ſhort and thick. The roots of this are very thick, and ſpread widely under ground, by which it multiplies faſter than either of the other; the ſeeds are alſo much larger and rougher than thoſe of the common ſort. This was ſent by Dr. Tournefort to the royal garden at Paris, and from thence the other botanic gardens have been ſupplied with them.

The fifth ſort greatly reſembles the other in the ſhape of its pinnæ (or ſmaller leaves) but there are but three upon each foot-ſtalk; the flower of this hath a double empalement, the outer one being fringed. There are but ſeven or eight ſtamina in each flower, and the ſeeds are ſmooth, for which reaſon Fabius Columna, and other writers on botany, have ſeparated it from the Agrimony, making it a diſtinct genus.

All theſe ſorts are hardy perennial plants, which will thrive in almoſt any ſoil or ſituation, and require no other care but to keep them clear from weeds. They may be propagated by parting of their roots, which ſhould be done in autumn, when their leaves begin to decay, that the plants may be well eſtabliſhed before the ſpring. They ſhould not be planted nearer than two feet, that their roots may have room to ſpread. They may alſo be propagated by ſeeds, which ſhould be ſown in autumn, for if they are kept out of the ground till ſpring, they ſeldom come up the ſame ſeaſon.

AGROSTEMMA. Lin. Gen. Plant. 516. Wild Lychnis or Campion.

The CHARACTERS are,

The empalement of the flower is permanent, of one leaf, which is tubulous, thick, and cut into five narrow ſegments at the edge; the flower is compoſed of five petals, which are the length of the tube, but ſpread open at the top. In the center is ſituated an oval germen ſupporting five ſtyles, which are ſlender, erect, and crowned with ſimple ſtigma. Theſe are attended by ten ſtamina, five of which are inſerted in the baſe of the petals, and the others ſtand alternately between: after the flower is paſt, the germen becomes an oval oblong capſule, having one cell opening into five diviſions, which is filled with angular ſeeds.

This genus of plants is by Dr. Linnæus ranged in the fifth ſection of his tenth claſs, entitled Decandria pentagynia, the flowers of this diviſion having ten ſtamina and five ſtyles.

The SPECIES are,

1. AGROSTEMMA (*Githago*) hirſuta calycibus corollam æquantibus petalis integris nudis. Lin. Sp. Plant. 435. *Hairy wild Lychnis, whoſe empalement is equal with the corolla, and the petals entire and naked, commonly called Corn Campion.* Lychnis ſegetum major. C. B. P.
2. AGROSTEMMA (*Celiroſa*) glabra foliis lineari-lanceolatis petalis emarginatis coronatis. Hort. Upſal. 115. *Smooth wild Campion with narrow ſpear-ſhaped leaves, and the petals of the flowers indented at their brim.* Lychnis foliis glabris calyce duriore. Bocc. Sic. 27.
3. AGROSTEMMA (*Coronaria*) tomentoſa foliis ovato-lanceolatis, petalis integris coronatis. Hort. Upſal. 115. *The ſingle Roſe Campion.* Lychnis coronaria Dioſcoridis ſativa. C. B. P. 203.
4. AGROSTEMMA (*Flos Jovis*) tomentoſa petalis emarginatis. Lin. Sp. Plant. 436. *Umbelliferous Mountain Campion.* Lychnis umbellifera montana Helvetica. Zan. Hiſt. 128.

The firſt ſort grows naturally in the corn fields in moſt parts of England, ſo is ſeldom admitted into gardens.

The ſecond ſort grows naturally in Sicily, and being a plant of little beauty, is only preſerved in botanic gardens for the ſake of variety.

The ſingle Roſe Campion has been long an inhabitant of the Engliſh gardens, where, by its ſeed having ſcattered, it is become a kind of weed. There are three varieties of this plant, one with deep red, another with fleſh-coloured, and a third with white flowers,

but theſe are of ſmall eſteem; for the double Roſe Campion being a fine flower, has turned the others out of moſt fine gardens. The ſingle ſorts propagate faſt enough by the ſeeds, where they are permitted to ſcatter, for the plants come up better from ſelf-ſown ſeeds, than when they are ſown by hand, eſpecially if they are not ſown in autumn.

The ſort with double flowers, which is a variety of the former, never produces any ſeeds, ſo is only propagated by parting of the roots; the beſt time for this is in autumn, after their flowers are paſt; in doing of this, every head which can be ſlipped off with roots ſhould be parted. Theſe ſhould be planted in a border of freſh undunged earth, at the diſtance of ſix inches one from the other, obſerving to water them gently until they have taken root; after which they will require no more, for much wet is very injurious to them, as is alſo dung. In this border they may remain till ſpring, when they ſhould to be planted into the borders of the flower-garden, where they will be very ornamental during the time of their flowering, which is July and Auguſt.

The fifth ſort grows naturally upon the Helvetian mountains; this is a low plant, with woolly leaves; the flower-ſtem riſes near a foot high; the flowers grow in umbels on the top of the ſtalk, which are of a bright red colour. It flowers in July, and the ſeeds ripen in September. It muſt have a ſhady ſituation, and will thrive beſt in a moiſt ſoil.

AIR [*Aër*, *Lat.* Ἀήρ, of τῷ ἀεὶ ῥεῖν, becauſe it always flows; or as others, of ἄημι, to breathe.] By air is meant all that fluid expanded maſs of matter which ſurrounds our earth, in which we live and walk, and which we are continually receiving and caſting out again by reſpiration.

The ſubſtance whereof air conſiſts, may be reduced to two kinds, viz.

1. The matter of light or fire, which is continually flowing into it from the heavenly bodies.

2. Thoſe numberleſs particles, which is in form either of vapours, or dry exhalations, are raiſed from the earth, water, minerals, vegetables, animals, &c. either by the ſolar, ſubterraneous, or culinary fire.

Elementary air, or air properly ſo called, is a certain ſubtile, homogeneous, elaſtic matter, the baſis or fundamental ingredient of the atmoſpherical air, and that which gives it the denomination.

Air therefore may be conſidered in two reſpects; either as it is an univerſal aſſemblage, or chaos, of all kinds of bodies; or as it is a body endued with its own proper qualities.

1. That there is fire contained in all air is demonſtrable, in that it is evident, that there is fire exiſting in all bodies, and to this fire it is that air ſeems to owe all its fluidity; and were the air totally diveſted of that fire, it is more than probable that it would coaleſce into a ſolid body; for it is found by many experiments, that the air condenſes and contracts itſelf ſo much the more, the leſs degree of warmth it has; and, on the contrary, expands itſelf the more, according as the heat is greater.

2. In reſpect of exhalations, air may be ſaid to be a general collection of all kinds of bodies; for there are no bodies but what fire will render volatile, and diſperſe into air; even ſalts, ſulphurs, and ſtones, nay and gold itſelf, though the heavieſt and moſt fixed of all bodies, are convertible into vapours by a large burning-glaſs, and are carried on high.

Thoſe floating particles, thus raiſed from terreſtrial bodies, are moved and agitated by the fiery particles divers ways, and are diffuſed through the whole atmoſphere.

Of the matters thus raiſed in the atmoſphere, thoſe which come from fluid bodies, are properly called vapours, and thoſe from ſolid or dry ones, exhalations.

The cauſe of this volatility and aſcent is the fire, without which all things would fall immediately down towards the center of the earth, and remain in eternal reſt.

Thus, if the air be full of vapours, and the cold ſucceeds, theſe vapours before diſperſed are congregated and condenſed into clouds, and thus fall back again into the form of water, rain, ſnow, or hail.

From the time of the entrance of the ſpring till autumn, the evaporation is conſtant; but then it begins to fail, and in the winter ceaſes, to lay up freſh matter for the coming ſeaſon.

And thus it is that froſty winters, by congealing the waters, and by covering the earth with a cruſt, and thus impriſoning the exhalations, make a fruitful ſummer.

And this ſeems to be the reaſon why in ſome countries, where the winter is ſeverer than ordinary, the ſpring is more than ordinary fruitful; for in ſuch places the exhalations being pent up a long time, are diſcharged in the greater quantity, when the ſun makes them a paſſage; whereas, under a feebler cold, the flux would have been continual, and conſequently no great ſtock reſerved for the next occaſion.

This vaporous matter then being at length received into the atmoſphere, is returned again in the form of rain, a forerunner of a chearful crop.

As the ſun retires, the cold ſucceeds, and thus the diverſity of the ſeaſons of the year depends on a change in the face of the cruſt of the earth, the preſence of the air, and the courſe of the ſun.

And hence we conceive the nature of meteors, which are all either collections of ſuch vapours and exhalations, or diſperſions thereof.

The ſubtiler oils are always riſing into the air. Now two clouds, partly formed of ſuch oils, happening to meet and mix, by the attrition, the oil frequently takes fire, and hence proceed thunder, lightnings, and other phænomena, which may be farther promoted by the diſpoſition of the clouds to favour the excitation.

And hence ariſe great and ſudden alterations in the air, inſomuch that it ſhall be now intenſely hot, and raiſe the ſpirits perhaps to eighty-eight degrees in a thermometer; and yet, after a clap of thunder with a ſhower, it ſhall fall again in a few minutes no leſs than twenty or thirty degrees.

It is therefore impoſſible to pronounce what the degree of heat will be in any given place at any time, even though we know ever ſo well the places and poſition of the ſun and planets with reſpect to us, ſince it depends ſo much upon other variable things, no ways capable of being aſcertained.

The lower the place, the cloſer, denſer, and heavier is the air, till at length you arrive at a depth where the fire goes out; ſo that miners, who go deep, to remedy this inconvenience, are forced to have recourſe to an artificial wind, raiſed by the fall of waters, to do the office of the other air.

Now, conſidering the air as ſuch a chaos, or aſſemblage of all kinds of bodies, and a chaos ſo extremely liable to change, it muſt needs have a great influence on vegetable bodies.

3. Air conſidered in itſelf, or that properly called air.

Beſides the fire and exhalations contained in the circumambient atmoſphere, there is a third matter, which is what we properly mean by air.

To define the nature of it would be extremely difficult, inaſmuch as its intimate affections are unknown to us; all we know is,

1. That air is naturally an homogeneous ſimilar body.

2. That it is fluid.

3. That it is heavy.

4. That it is elaſtic.

5. That it rarefies by fire, and contracts by cold.

6. That it is compreſſible by a weight laid thereon, and riſes, and reſtores itſelf upon a removal of the ſame: all which circumſtances ſhould incline it to coaleſce into a ſolid, if fire were wanting.

1. Air is divided into real and permanent, and apparent or tranſient.

Real air is not reducible by any compreſſion or condenſation, or the like, into any ſubſtance beſides air.

Tranſient air is the contrary of the former, and by cold,

cold, &c. may be condenſed into original water; the difference between permanent and tranſient air, amounts to the ſame as that between vapour and exhalation; the one, e. g. being dry, and the other moiſt. Hence, as Sir Iſaac Newton ſays, it is, that as the particles of permanent air are groſſer, and ariſe from denſer bodies, than thoſe of tranſient air or vapour, true air is more ponderous than vapour, and a moiſt atmoſphere lighter than a dry one.

But this real air no where conſiſts in its purity, but that air which concerns us, and the properties and effects of which are chiefly to be conſidered, is that which has been before treated on and deſcribed, which Mr. Boyle acknowledges to be the moſt heterogeneous body in the univerſe; and Dr. Boerhaave ſhews it to be an univerſal chaos and colluvies of all the kinds of created bodies in the univerſe, and in which may be found whatever fire can volatize.

2. That the air is fluid, appears from the eaſy paſſage it affords to bodies through it; as in the propagation of ſounds, ſmells, and other effluvia; for theſe things ſhew it a body that gives way to any force impreſſed, and in yielding are eaſily moved among themſelves, which are the properties of a fluid; ſo that ſcarce any body will call in queſtion, whether air be a fluid, and thence being always in motion, and always moving other bodies, for no ſurface of any liquor that is contiguous to the air, can be at reſt.

3. As to the gravity or heavineſs of the air, that is likewiſe eaſily proved; for that the air is heavy, follows from its being a body, weight being an eſſential property of matter.

Senſe and experiment ſufficiently prove this: for, if a perſon lay his hand upon an open veſſel placed on an air-pump, and the air be exhauſted, he will ſenſibly feel the load of the incumbent atmoſphere to increaſe, and preſs upon the upper part of his hand, as the air is exhauſting.

In like manner, a hollow ſphere of five or ſix inches diameter, divided into two ſegments exactly fitting each other, after the air is exhauſted out of them, are preſſed together with a force equal to a hundred pounds weight, and require the ſtrength of two ſtrong perſons to pull them aſunder; which, as ſoon as ever the air is let into them again, will fall aſunder by the mere weight of the under hemiſphere.

Mr. Boyle found that a lamb's bladder, containing about two thirds of a pint, and blown up, and well dried, loſt about a grain and one eighth, when it was pricked, and the air let out.

Mr. Graveſande found, that the air in a glaſs ball of about two hundred and eighty-three inches capacity, weighed a hundred grains; and according to Burcher de Volder, a cubic foot of air is in weight one ounce, and twenty-ſeven grains.

Mr. Boyle has computed, that the weight of any quantity of air, near the ſurface of the earth, is to water as 1 to 1000; and Dr. Halley, as 1 to 800; and Mr. Hawkſbee, as 1 to 885; and the gravity of the ſame quantity of air to the ſame quantity of mercury, as 1 to 10800.

Air therefore may be conſidered as an univerſal operculum, or cover, which by its weight keeps all terreſtrial bodies down, and hinders them from flying off.

4. The air is elaſtic. Elaſticity is a quality whereby a body yields to any external impreſſions by contracting itſelf into leſs compaſs; and upon removing or diminiſhing the impreſſive power, returns to its former ſpace or figure. And by this quality, the air is diſtinguiſhed from all other bodies in the atmoſphere; neither fire nor exhalations appearing to be elaſtic, at leaſt in any notable degree.

That there is ſuch a quality in the air, is evident from innumerable experiments; and this property is inſeparable from it. A bladder full blown being ſqueezed in the hand, the included air may be ſenſibly perceived to reſiſt the touch; ſo that upon ceaſing to compreſs it, the cavities or impreſſions, which were made in its ſurface, are immediately expanded again, and filled up.

Alſo thin glaſs bubbles, or bladders full of air, and exactly cloſed, and put into the receiver of an air-pump, the air being exhauſted out of the receiver, the glaſs bubbles fly in pieces by the force of the air included in them.

From theſe experiments, and many others, it appears, that the air we breathe near the ſurface of the earth is compreſſed by its own weight into at leaſt 1679 parts of the ſpace it would poſſeſs in vacuo; and if the ſame air be condenſed by art, the ſpace it will occupy, when moſt dilated, will be as 505000 to 1, to that which it poſſeſſes when condenſed; and Dr. Wallis ſuggeſts, that we are far from knowing the utmoſt it is capable of.

Nor does this power appear capable by any means to be deſtroyed or diminiſhed; for Mr. Boyle made ſeveral experiments to diſcover how long air, brought to the greateſt degree of expanſion he could reduce it to in his air-pump, would retain its ſpring, and could never obſerve any ſenſible diminution; although the air was clogged ſome months with a weight that one would admire how it ſhould ſupport one moment.

It is, indeed, a wonderful property in air, that it ſhould be capable of being contracted and extended infinitely; but, as hath been ſaid, it does not appear, by all the experiments yet tried, that there are any limits of its compreſſion or expanſion; but ſtill by the addition of a new weight, it will contract farther; and by taking the weight away, will expand farther.

5. Air rarefies by fire, and contracts by cold.

The colder the air is, the leſs ſpace it takes up; and, on the contrary, the warmer the air is, it poſſeſſes the larger ſpace; and ſo cooling and compreſſion have the ſame effects upon air; and ſo cold and compreſſion keep pace with one another.

The ſame holds of warming and diminiſhing of weight, or heat and expanſion, which go hand in hand.

And to the ſame elaſtic power before-mentioned, and its being expanded by heat, it is owing, that air incloſed in glaſs veſſels, at a time when it is much condenſed, when it afterwards comes to expand by a farther degree of heat, frequently burſts the bottles.

6. Air is compreſſible by a weight laid thereon, and riſes and reſtores itſelf upon a removal of the ſame. This property has been ſufficiently ſhewn by what has been ſaid before, and eſpecially under the head of elaſticity; wherefore, having conſidered the properties of air, I ſhall take notice of ſome of its operations and effects as to the buſineſs of vegetation.

Air, by being heavy and fluid, inveſts the whole earth, and preſſes all the bodies thereon with a great force, equal to what they would ſuſtain from the preſſure of a column of 29 inches depth of mercury, or 32 feet of water; and conſtringes and binds them down with a force amounting, according to the computation of Mr. Paſchal, to 2232 pounds weight upon every ſquare foot, or upwards of 15 pounds upon every ſquare inch. Hence it prevents, e. g. the arterial veſſels of plants and animals from being too much diſtended by the impetus of the circulating juices, or by the elaſtic force of the air ſo plentifully lodged in the blood of one, and the ſap of the other. For,

The air preſſes equally every way, as is confirmed in what we obſerve of ſoft bodies ſuſtaining this preſſure without any change of figure, and brittle bodies without their breaking.

Air is a principal cauſe of the vegetation of plants, an inſtance of which we have from Mr. Ray, in the Philoſophical Tranſactions of Lettuce-ſeed, that was ſown in the glaſs-receiver of the air-pump, which was exhauſted and cleared from all air, which grew not at all in eight days time; whereas ſome of the ſame ſeed that was ſown at the ſame time in the open air, was riſen to the height of an inch and a half in that time; but the air being let into the empty receiver, the ſeed grew up to the height of two or three inches in the ſpace of one week.

That a certain portion of air is neceſſary to preſerve the growing quality of ſeeds is manifeſt, from many

repeated

repeated experiments; by putting up ſeeds into glaſs bottles, and ſealing the bottles hermetically, and in ſix months thoſe ſeeds have loſt their growing quality; whereas part of the ſame ſeeds which were kept in bags, grew at the age of two years; therefore it ſhould caution perſons not to exclude the air from their ſeeds, if they intend they ſhould grow.

Another inſtance of the uſefulneſs of the air in vegetation, is the Sedum, which will puſh out roots without earth and water, and live for ſeveral months: and ſome ſorts of Aloes, if hung up in a room entirely ſecured from froſts, will remain freſh for ſome years, though they will ſenſibly loſe in their weight.

Air is capable of penetrating the porous and ſpongy parts of plants, and being there contracted, and dilating itſelf again.

The air operates alſo within the bowels of the earth, and by its ſubtilty perſpiring through the pores, aſſiſts in the rarefaction of the crudities of the earth, and in the diſpelling all ſuperfluous moiſture, entering into the very pores and veins of the trees, plants, herbs, &c. carrying along with it thoſe ſalts contained either in itſelf, or lodged in the earth; which ſalts or juices, are altered according to the ſeveral figures or dimenſions of the different ſtrainers or veſſels of thoſe ſeveral plants, which grow upon the ſame ſpot of earth, which is ſo impregnated with theſe ſalts: and thence thoſe varieties in taſte and ſmell proceed, notwithſtanding they all receive their nouriſhment from the ſame ſtock that is lodged in the earth.

The air alſo affects the branches, leaves, and flowers of trees, plants, and herbs, entering and perſpiring through them, and even through the bark and body of the tree; and by the ſame kind of ſubtilty it does, by its refreſhing breezes, moderate the intenſeneſs of the ſun-beams, cooling, chearing, blowing, opening and extending all the offspring of nature.

The air fixes and inſinuates its aërial ſubſtance into the liquid ſap of vegetables: and as all the agitations in nature proceed from the contrariety of parts inhabiting together, in this, aërial and liquid ſubſtances being mixed, cauſe this agitation and motion in vegetables, or, more properly, ſet it all into a ferment (whether it be in the roots, or in the ſtem); and it riſes by co-operation of the ſun (which is the third agent in vegetation) up to the top of a tree, &c. as liquids riſe by fire to the top of the containing veſſel.

This air, we find, produces a vibratory motion in ſeveral bodies; and particularly in plants, the air veſſels thereof do the office of lungs: for the air contained in them, ſometimes contracting, and ſometimes expanding, according as the heat is increaſed or diminiſhed, preſſes the veſſels, and eaſe them again by turns; and thus promotes a circulation of their juices, which could ſcarce be otherwiſe effected.

Air, ſays the learned Dr. Hales, is a fine elaſtic fluid, with particles of very different natures floating in it, whereby it is admirably fitted by the great Author of nature to be the breath or life of vegetables as well as animals, without which they can no more live nor thrive than animals can.

As a proof of the great quantities of air in vegetables, he refers to the third chapter of his excellent treatiſe of Vegetable Statics, where he ſays, in the experiments on Vines, the great quantity of air was viſible, which was continually aſcending through the ſap in the tubes; which manifeſtly ſhews what plenty of it is taken in by vegetables, and is perſpired off with the ſap through the leaves.

He adds ſeveral experiments, as to an Apple branch, Apricot branch, Birch, and other plants, to prove the ſame thing.

And Dr. Grew has obſerved, that the pores are ſo large in the trunks of ſome plants, as in the better ſort of thick walking-canes, that they are viſible to a good eye without a glaſs; but with a glaſs, the cane ſeems as if ſtuck at top full of holes with great pins, ſo large as very well to reſemble the pores of the ſkin in the ends of the fingers and ball of the hand.

In the leaves of Pines, they are likewiſe through a glaſs a very elegant ſhew, ſtanding almoſt exactly in rank and file through the length of the leaves.

Whence it may be thought probable, that the air freely enters plants, not only with the principal fund of nouriſhment by the roots, but alſo through the ſurface of their trunks and leaves, eſpecially at night, when they are changed from a perſpiring, to a ſtrongly imbibing ſtate.

Dr. Hales likewiſe tells us, that in all thoſe experiments that he tried to this purpoſe, he found that the air entered very ſlowly at the bark of young ſhoots and branches, but much more freely through old bark; and that in different kinds of trees it had different degrees of more or leſs free entrance.

And likewiſe, that there is ſome air both in an elaſtic and unelaſtic ſtate, mixed with the earth (which may well enter the roots with the nouriſhment), he found by ſeveral experiments, which he gives in the beforementioned treatiſe.

The excellent Mr. Boyle, in making many experiments on the air, among other diſcoveries found, that a good quantity of air was producible from vegetables, by putting Grapes, Plums, Gooſberries, Peaſe, and ſeveral other ſorts of fruits and grains into exhauſted and unexhauſted receivers, where they continued for ſeveral days emitting great quantities of air.

This put the curious Dr. Hales upon farther reſearches to find out what proportion of air he could obtain out of the different vegetables, in which it was lodged and incorporated, which he performed by divers chymio-ſtatical experiments, which he gives in many inſtances in his treatiſe of the analyſis of the air, plainly ſhewing in what manner he performed them, and the events of them.

That from half a cubic inch, or 135 grains of heart of Oak, freſh cut from a growing tree, there were 108 cubic inches of air generated, which is a quantity equal to 216 times the bulk of the piece of Oak; that the weight of it was above 30 grains, one quarter part of the weight of 135 grains.

And he adds, that he took the like quantity of thin ſhavings from the ſame piece of Oak, and dried them at ſome diſtance from a gentle fire for 24 hours; in which time they evaporated 44 grains of moiſture; which 44 grains deducted from 135 grains, there remains 91 grains for the ſolid part of the Oak: then 30 grains will be one third of the weight of the ſolid part of the Oak.

He gives another experiment of Indian Wheat, which grew in his own garden, that he took 388 grains of it when it was not come to its full maturity, and that there were generated from it 270 cubic inches of air; the weight of which air was 77 grains, viz. one fourth of the weight of the Wheat.

And again, that a cubic inch, or 318 grains of Peaſe generated 396 cubic inches of air, or 113 grains, i. e. ſomething more than one third of the weight of the Peaſe.

And again, that from one ounce, or 437 grains of Muſtard ſeed, 270 cubic inches of air were generated, or 77 grains, which is more than one ſixth part of the ounce weight.

He likewiſe adds, that there is a great plenty of air incorporated into the ſubſtance of vegetables, which, by the action of fermentation, is rouſed into an elaſtic ſtate, as is evident from theſe experiments following.

On the 2d day of March, he poured 42 cubic inches of ale from the tun, which had been there ſet to ferment 34 hours before into a bolt head; and from that time to the 9th of June, it generated 639 cubic inches of air, with a very unequal progreſſion, more or leſs, as the weather was warm, cool, or cold; and ſometimes, upon a change from warm to cool, it reſorbed air, in all 32 cubic inches.

From the 2d of March to the 16th of April, 12 cubic inches of Malaga Raiſins, with 18 cubic inches of water, generated 411 cubic inches of air; and then again, it reſorbed 35 cubic inches in two or three cold days. From the 21ſt of April to the 16th of May, it generated 78 cubic inches; after which, the 9th of

June, it continued in a reſorbing ſtate, ſo as to reſorb 13 cubic inches: that there were at that ſeaſon many hot days, with much thunder and lightning, which deſtroys the elaſticity of the air: there were generated in all 489 cubic inches, of which 48 were abſorbed. The liquor was at laſt vapid.

On the 10th of Auguſt, 26 cubic inches of Apples being maſhed, they generated 986 cubic inches of air in 13 days time, which is a quantity equal to 48 times their bulk; after which they reſorbed a quantity equal to their bulk, in three or four days, notwithſtanding the weather was then very hot; after which time they were ſtationary for many days, neither generating nor abſorbing.

From which before-mentioned experiments on Raiſins and ale, the ingenious author concludes, that wine and ale do not turn vapid in warm weather by imbibing the air, but by fermenting and generating too much; by which means they are deprived of their enlivening principle the air: for which reaſon, theſe liquors are beſt preſerved in cool cellars, whereby this active invigorating principle is kept within due bounds; which when they exceed, wines are upon the fret, and are in danger of being ſpoiled.

Upon theſe, and many other experiments, which the learned author has given in his aforeſaid treatiſe, he obſerves, that this air which ariſes in ſo great quantities from fermenting and diſſolving vegetables, is true permanent air; which is certain, by its continuing in the ſame expanded and elaſtic ſtate for many weeks and months; which expanded watery vapours will not do, but ſoon condenſe when cold.

Upon the whole, he concludes, that air abounds in vegetable ſubſtances, and bears a conſiderable part in them: and if all the parts of matter were only endowed with a ſtrongly attracting power, all nature would then immediately become one unactive cohering lump.

Wherefore it was abſolutely neceſſary, in order to the actuating this vaſt maſs of attracting matter, that there ſhould be every where mixed with it a due proportion of ſtrongly-repelling elaſtic particles, which might enliven the whole maſs by the inceſſant action between them and the attracting particles.

And ſince theſe elaſtic particles are continually in great abundance reduced by the power of the ſtrong attracters, from an elaſtic to a fixed ſtate, it was therefore neceſſary that theſe particles ſhould be endued with a property of reſuming their elaſtic ſtate, whenever they were diſengaged from that maſs in which they were fixed, that thereby this beautiful frame of things might be maintained in a continual round of the production and diſſolution of vegetables as well as animal bodies.

The air is very inſtrumental in the production and growth of vegetables, both by invigorating their ſeveral juices, while in an elaſtic active ſtate, and alſo by greatly contributing in a fixed ſtate, to the union and firm connexion of the ſeveral conſtituent parts of thoſe bodies, viz. their water, fire, ſalt, and earth.

To conclude, by reaſon of thoſe properties of the air before-mentioned, it is very ſerviceable to vegetables, in that it blows up and breaks open the clouds, thoſe treaſures of rain, which fertilize the vegetable kind.

The air alſo helps to waft or diſperſe thoſe foggy humid vapours which ariſe from the earth, and would otherwiſe ſtagnate, and poiſon the whole face of the earth.

The air, by the aſſiſtance of the ſun, aſſumes and ſublimates thoſe vapours into the upper regions; and theſe foggy humid vapours are, by this ſublimation, and the coercive power of the air and ſun, rarefied and made of ſecond uſe in vegetation.

And on the contrary, to the benign quality of the air, which is ſo many ways ſubſervient to vegetables, it is alſo ſometimes, and upon ſome accounts, injurious and pernicious to them; not only to the ligneous, herbaceous, and flowery parts above, but alſo to the roots and fibres below: for in that the air penetrates into the earth, it is eaſy to be concluded, that a dry, huſky, ſcorching air, may be very prejudicial to the tender fibres of new planted trees.

It may be likewiſe ſuppoſed, that all bodies of earth are more or leſs capable of imbibing the fluid air, and of attracting ſuch ſalts as either the air can give, or the earth is capable of receiving.

AIZOON. Sempervive.

This name Dr. Linnæus has given to a plant near of kin to the Ficoides, which has been called Ficoidea, by ſome modern botaniſts.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is cut into five acute ſegments at the top: there are no petals in the flower, but the five-cornered germen reſts on the empalement, ſupporting five ſtyles, which are crowned with ſimple ſtigma; theſe are attended by many hairy ſtamina, which are inſerted into the empalement, and are crowned with ſimple ſummits. The germen afterward becomes a ſwelling five-cornered capſule, having five cells, in which are lodged many roundiſh ſeeds.

This genus of plants is by Dr. Linnæus ranged in the fifth diviſion of his twelfth claſs, entitled Icoſandria Pentagynia, the flowers of this claſs having more than nineteen ſtamina, and in this diviſion they have five ſtyles.

The SPECIES are,

1. AIZOON (*Canarienſe*) foliis cuneiformi-ovatis floribus ſeſſilibus. Hort. Upſal. 127. *Sempervive with oval wedge-ſhaped leaves, and flowers without foot-ſtalks.* Ficoidea procumbens portulacæ folio. Niſſol. Act. Par. 1711.
2. AIZOON (*Hiſpanicum*) foliis lanceolatis floribus ſeſſilibus. Lin. Sp. Plant. 488. *Sempervive with ſpear-ſhaped leaves and flowers, having no foot-ſtalks.* Ficoidea Hiſpanica annua folio longiore. Hort. Elth. 143.
3. AIZOON (*Paniculatum*) foliis lanceolatis floribus paniculatis. Lin. Sp. Pl. 448. *Sempervive with ſpear-ſhaped leaves and flowers growing in panicles.* Aizoon foliis lanceolatis ſubtus hirſutis. Prod. Leyd. 221.

As we have no Engliſh names for theſe plants, ſo I have adopted this of Sempervive, which hath been applied to the Aloe and Sedum, both which have been alſo titled Aizoon and Sempervivum.

The firſt ſort is a native of the Canary Iſlands: this is an annual plant, which muſt be raiſed on a moderate hot-bed in the ſpring; and when the plants are fit to tranſplant, they ſhould be carefully taken up, and planted each into a ſmall pot filled with freſh light earth, and plunged into another moderate hot-bed, obſerving to ſhade them from the ſun until they have taken freſh root; after which they muſt be hardened by degrees to bear the open air, into which they ſhould be removed in June, placing them in a ſheltered ſituation, where they will flower, and ripen their ſeeds in September, ſoon after which the plants will periſh.

The ſecond ſort grows naturally in Spain; this is alſo an annual plant, whoſe branches trail on the ground; the flowers have no beauty, ſo theſe plants are only preſerved by thoſe who are curious in collecting rare plants for the ſake of variety.

The third ſort grows naturally at the Cape of Good Hope, from whence the ſeeds were brought to Europe. This is alſo of humble growth, and periſhes ſoon after the ſeeds are ripe.

Theſe may be propagated in the ſame manner as the firſt, and when the plants have acquired ſtrength, they may be planted in the full ground; but they require a poor ſandy ſoil, for in rich ground they will grow very luxuriant in branches, but will not flower till late in the ſeaſon, ſo rarely perfect their ſeeds; but when they are planted in dry ſand, or lime rubbiſh, they will be more productive of flowers, and leſs vigorous in their branches.

ALA is the hollow of a ſtalk, which either the leaf, or the pedicle of the leaf, makes with the ſtalk or branches; or it is that hollow ſinus placed between the ſtalk or branch and leaf, from whence a new offſpring is wont to put forth, which the French call,

Aiſſelles

Aiſſelles des Plantes. Sometimes it is uſed for leaves which conſiſt of many lobes or wings.

Alæ is alſo uſed to ſignify thoſe petala of papilionaceous flowers placed between the Vexillum and the Carina, which the French call, *Les Ailes des Fleurs legumineuſes.*

Alæ is alſo uſed for thoſe extreme ſlender membranaceous parts of certain ſeeds; as is the Bignonia Plumeria, the fruit of the Maple, &c. which the French call *Semences aîlées.* Again,

Alæ is uſed for thoſe foliaceous membranes which run the whole length of the ſtem; whence it is called, *Caulis alatus*, a winged ſtalk; in French, *Tige aîlée:* but modern writers have ſtyled theſe *foliis decurrentibus*, or running leaves, becauſe theſe alæ or wings are connected with the leaves.

ALABASTRA, are thoſe green herbaceous leaves that encompaſs flowers. Jungius explains Alabaſtrum to be the globe, or roundiſh bud, that is but juſt peeping out.

ALATERNOIDES. See PHYLICA, CLUTIA, and CEANOTHUS.

ALATERNUS [called Ἐλαιόπρινος, as though of ἐλαία, an Olive, and πρῖνος, an Ilex], or evergreen Privet.

The CHARACTERS are,

It hath male and female flowers in different plants in ſome ſpecies, and in others both ſorts of flowers on the ſame. The male flowers are compoſed of an empalement of one leaf, which is funnel-ſhaped, and cut into five ſegments at their brim; to the ſides of the empalement are fixed five ſmall petals; at the baſe of theſe petals are faſtened ſo many ſtamina, which are crowned with round ſummits. The female flowers have a great reſemblance to the male, but have no ſtamina. In the center is placed the germen, ſupporting a trifid ſtyle crowned by a round ſtigma, the germen afterward becomes a ſoft round berry, containing three ſeeds.

Dr. Linnæus has joined this genus to the Rhamnus, to which he has alſo added the Frangula, Paliurus, and Zizyphus, and ranges them in his fifth claſs of plants, entitled Pentandria Monogynia.

The SPECIES are,

1. ALATERNUS (*Phylica*) foliis ovatis marginibus crenatis glabris. *Common Alaternus, with ſmooth leaves indented on their edges.* Alaternus; 1 Cluſ. Hiſp. 56.
2. ALATERNUS (*Glabra*) foliis ſubcordatis ſerratis glabris. *Alaternus with heart-ſhaped ſmooth leaves, which are ſawed on their edges.* Alaternus minore folio. Tourn. Inſt. 595.
3. ALATERNUS (*Anguſtifolia*) foliis lanceolatis profundè ſerratis glabris. *Alaternus with ſmooth ſpear-ſhaped leaves, which are deeply ſawed.* Alaternus monſpeliaca foliis profundiùs inciſis. H. R. Par.
4. ALATERNUS (*Latifolia*) foliis ovato-lanceolatis integerrimis glabris. *Alaternus with ſmooth oval ſpear-ſhaped leaves, which are entire.* Alaternus Hiſpanica latifolia. Tourn. Inſt. 596.

The varieties of theſe plants are, the firſt ſort with variegated leaves, which is commonly called Bloatched Phillyrea by the nurſery gardeners. And the third ſort with leaves ſtriped with white, and another with yellow; theſe are known by the Silver and Gold ſtriped Alaternus: but as theſe are accidental varieties, I have omitted placing them among the number of ſpecies.

The common diſtinction of this genus from the Phillyrea, is in the poſition of their leaves, which in the plants of this are placed alternately on the branches, whereas thoſe of Phillyrea are placed by pairs oppoſite; this is obvious at all ſeaſons, but there are more eſſential differences in their characters, as will be explained under the article Phillyrea.

The firſt ſort has been long cultivated in the Engliſh gardens, but the plain ſort is now uncommon here; for the bloatched-leaved ſort has been generally cultivated in the nurſeries, and the other has been almoſt totally neglected.

Theſe plants were much more in requeſt formerly than they are at preſent, when they were planted againſt walls in court-yards to cover them, as alſo to form evergreen hedges in gardens, for which purpoſe theſe were improper; for their branches ſhoot very vigorouſly, and being very pliant, they are frequently diſplaced by the wind; and in winter, when much ſnow falls in ſtill weather, the weight of that which lodges on the hedges, frequently breaks them down: add to this the trouble of keeping them in order, which cannot be effected with leſs than three times clipping in a ſeaſon, which is not only expenſive, but alſo occaſions a great litter in a garden: theſe inconveniencies have juſtly brought theſe hedges into diſeſteem.

The third ſort with ſilver-ſtriped leaves, was alſo in great requeſt ſome years ago, for planting againſt out-houſes, and other buildings, to hide the brick-work; but as theſe required to be often clipped, and their branches frequently wanting to be faſtened up to the wall, which was troubleſome and expenſive, and this ſort of wall hedges being great harbour for vermin, there has been of late but little demand for theſe plants. The ſort with gold-ſtriped leaves is pretty rare in the Engliſh gardens, and is not ſo hardy as that with ſilver ſtripes, ſo that in ſevere winters they are often killed. But the taſte for theſe variegated plants is almoſt loſt in England, there being few perſons now, who do not prefer the plain green leaves to thoſe which are ſtriped.

The ſecond ſort was formerly in the Engliſh gardens, in much greater plenty than at preſent. This was generally called Celaſtrus, or Staff-tree. The leaves of this ſort are placed at greater diſtances than thoſe of the firſt, ſo that their branches appear thinly covered with them, which may have occaſioned their being diſeſteemed. The leaves of this are ſhorter than thoſe of the firſt ſort, and are rounded at their foot-ſtalks ſomewhat like a heart-ſhaped leaf, the edges are alſo ſawed.

The thrid ſort has been an old inhabitant in ſome gardens, but was not much propagated till of late years; the leaves of this are much longer and narrower than thoſe of either of the other ſorts, and the ſerratures on their edges are much deeper; this ſhoots its branches more erect, and forms an handſomer buſh than any of the other, and is equally hardy, ſo may be allowed to have a place in all plantations of Evergreens. This grows naturally in the ſouth of France, where the berries are gathered, and ſold by the name of Avignon berries, for the uſe of painters, &c. for making a yellow pigment.

Theſe ſorts are by ſome ſuppoſed to be only varieties and not diſtinct ſpecies; but from many repeated trials, in raiſing them from ſeeds, I can affirm they do not vary, the ſeeds conſtantly producing the ſame ſpecies as they were taken from.

The ſecond ſort grows naturally about Turin, from whence I have been ſupplied with the ſeeds.

All theſe ſorts are eaſily propagated by laying their branches down, as is practiſed for many other trees. The beſt time for this is in the autumn, and if properly performed, the layers will have made good roots by the autumn following, when they may be cut off from the old ſtock, and planted either into the nurſery, or in the places where they are deſigned to remain. When they are planted in a nurſery, they ſhould not remain there longer than a year or two; for as they ſhoot their roots to a great diſtance on every ſide, ſo they cannot be removed after two or three years growth, without cutting off great part of them, which is very hurtful to the plants, and will greatly retard their growth, if they ſurvive their removal; but they are frequently killed by tranſplanting, when they have ſtood long in a place. They may be tranſplanted either in the autumn or the ſpring, but in dry land the autumn planting is beſt, whereas in moiſt ground the ſpring is to be preferred.

The plain ſorts may alſo be propagated by ſowing their berries, which they produce in great plenty, but the birds are greedy devourers of them; ſo that unleſs the berries are guarded from them, they will ſoon be

be devoured when they begin to ripen. The plants which ariſe from ſeeds, always grow more erect than thoſe which are propagated by layers, ſo are fitter for large plantations, as they may be trained up to ſtems, and formed more like trees; whereas the layers are apt to extend their lower branches, which retards their upright growth, and renders them more like ſhrubs. They will grow to the height of eighteen or twenty feet, if their upright ſhoots are encouraged; but to keep their heads from being broken by wind or ſnow, thoſe branches which ſhoot irregular ſhould be ſhortened, which will cauſe their heads to be cloſer, and not in ſo much danger.

All the ſorts thrive beſt in a dry, gravelly, or ſandy ſoil, for in rich ground they are often injured by froſt, when the winters are ſevere, but in rocky dry land they are ſeldom injured: and if in very hard froſt their leaves are killed, yet the branches will remain unhurt, and will put out new leaves in the ſpring.

ALBUCA, Baſtard Star of Bethlehem.

The CHARACTERS are,

The flower has no empalement; it has ſix oblong oval petals, which are permanent; the three outer ſpread open, and the three inner are connected: it hath ſix three-cornered ſtamina the length of the corolla, three of which are fertile, crowned with moveable ſummits, the other three, which are barren, have no ſummits. The nectarium is ſituated near the baſe of the three fertile ſtamina; it has an oblong three-cornered germen, with a broad triangular ſtyle, crowned by a pyramidal three-cornered ſtigma; the capſule is three-cornered, having three cells filled with ſmall plain ſeeds.

This genus is ranged in the firſt ſection of Linnæus's ſixth claſs of plants, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. ALBUCA (*Major*) foliis lanceolatis. Lin. Sp. 438. *Star flower with ſpear-ſhaped leaves.* Ornithogalum luteo-virens. Indicum. Corn. Canad.
2. ALBUCA (*Minor*) foliis ſubulatis. Lin. Sp. 438. *Star-flower with awl-ſhaped leaves.* Ornithogalum Africanum, flore viridi altero alteri innato. Herm. Parad. 209. *African Star-flower with a greeniſh yellow flower.*

Theſe plants have been generally ranged under the genus of Ornithogalum, but as their flowers differ in their form from the other ſpecies of that genus, Dr. Linnæus has conſtituted this genus for them.

The firſt ſort grows naturally in Canada, and in ſome other parts of North America; the root is bulbous, from which ſhoot up eight or ten long narrow ſpear-ſhaped leaves. In the center of theſe ariſe a flower-ſtem a foot or more in height, garniſhed with a looſe ſpike (or thyrſe) of greeniſh yellow flowers, each have a long pedunculus, which turns downward, having pretty large ſtipulæ at their baſe, which are erect, and end in ſharp points. After the flower is paſt, the germen ſwells to a three-cornered capſule, having three cells filled with flat ſeeds.

The ſecond ſort grows naturally at the Cape of Good Hope; this hath alſo a pretty large bulbous root, from which ariſe four or five narrow awl-ſhaped leaves, of a deep green colour: the flower-ſtem which comes from the center of the root, is naked, and rarely riſes more than eight or nine inches high, having five or ſix greeniſh yellow flowers growing almoſt in form of an umbel at the top: theſe are rarely ſucceeded by ſeeds in England.

The Canada Albuca is hardy, ſo the roots may be planted about four inches deep in a border of light earth, where they will thrive, and produce their flowers late in the ſummer; but as the ſeeds rarely ripen in England, and the bulbs do not put out many offſets, the plants are not common in this country.

The African ſort I raiſed from ſeeds a few years paſt; this generally flowers twice a year, the firſt time in March or April, and again in July or Auguſt, but has not produced any ſeeds. If the roots of this ſort are kept in pots, filled with light earth, and are ſheltered under a hot-bed frame in winter, they will thrive and produce flowers; but the beſt method is to have

a border in the front of a green-houſe, or ſtove, where the roots of moſt of the bulbous flowers may be planted in the full ground, and ſcreened in winter from froſt; in ſuch ſituations they thrive much better, and flower ſtronger, than when kept in pots.

ALCEA. Lin. Gen. 750. The Hollyhock.

The CHARACTERS are,

The flower hath a double empalement, of which one is permanent. The outer one is ſpread open, and cut at the top into ſix ſegments; the inner is larger, and ſlightly cut into five. The flower is compoſed of five petals, which coaleſce at their baſe, and ſpread open at the top in form of a roſe. In the center is placed the round germen, ſupporting a ſhort cylindrical ſtyle, crowned with numerous ſtigma, which is attended by many ſtamina joined below to the pentagonal column, and ſpread open at top; theſe are crowned with kidney-ſhaped ſummits: after the flower is paſt, the germen becomes a round, depreſſed, articulated capſule, having many cells, in each of which is lodged one compreſſed kidney-ſhaped ſeed.

This genus is ranged by Dr. Linnæus in his ſixteenth claſs of plants, entitled Monadelphia Polyandria: in this claſs the ſtamina and ſtyle coaleſce and form a ſort of column in the center of the flower, from whence Dr. Van Royen has given to this claſs the title of Columnifera, and in this diviſion there are a great number of ſtamina.

The SPECIES are,

1. ALCEA (*Roſea*) foliis ſinuatis anguloſis. Hort. Cliff. 348. *Hollyhock with angular ſinuated leaves.* Malva roſea folio ſubrotundo. C. B. P. 315.
2. ALCEA (*Ficifolia*) foliis palmatis. Hort. Cliff. 348. *Hollyhock with handed leaves.* Malva roſea folio ficus. C. B. P. 315.

Theſe are diſtinct ſpecies, whoſe difference in the form of their leaves always continues. The leaves of the firſt ſort are roundiſh, and cut at their extremity into angles; whereas thoſe of the ſecond are deeply cut into ſix or ſeven ſegments, ſo as to reſemble a hand.

The various colours of their flowers being accidental, as alſo the double flowers being only varieties which have riſen from culture, are not by botaniſts deemed diſtinct ſpecies. I have not enumerated them here, therefore ſhall only mention the various colours which are commonly obſerved in their flowers; which are white, pale, red, deep red, blackiſh red, purple, yellow, and fleſh colour. Beſides theſe, I many years ago ſaw ſome plants with variegated flowers, in the garden of the late Lord Burlington, in London, raiſed from ſeeds which came from China.

Although theſe varieties of double Hollyhocks are not conſtant, yet where the ſeeds are carefully ſaved from the moſt double flowers, the greateſt number of the plants will ariſe nearly the ſame, as the plants from which they were taken, both as to their colour and the fulneſs of their flowers, provided no plants with ſingle or bad coloured flowers are permitted to grow near them. Therefore ſo ſoon as any ſuch appear, they ſhould be removed from the good ones, that their farina may not ſpread into the other flowers, which would cauſe them to degenerate.

The firſt ſpecies grows naturally in China, from whence I have often received the ſeeds. The ſecond ſort I have received from Iſtria, where it was gathered in the fields, but theſe ſeeds produced ſingle red flowers only; whereas from ſome ſeeds of this ſort, which were given me by the late Charles Du Bois, Eſq; of Mitcham, in 1726, which he procured from Madras, I raiſed many double flowers of ſeveral colours.

Theſe plants, although natives of warm countries, yet are hardy enough to thrive in the open air in England, and have for many years been ſome of the greateſt ornaments in the garden, toward the latter part of ſummer; but ſince they have become very common, have not been ſo much regarded as they deſerve, partly from their growing too large for ſmall gardens, and their requiring tall ſtakes to ſecure them from being broken by ſtrong winds. But in large

gardens,

gardens, where they are properly diſpoſed, they make a fine appearance; for as their ſpikes of flowers grow very tall, there will be a ſucceſſion of them on the ſame ſtems, more than two months; the flowers on the lower part of the ſpike appearing in July, and as their ſtalks advance, new flowers are produced till near the end of September. When the plants are planted in good ground, their ſtalks often riſe to the height of eight or nine feet, ſo that near ſix feet of each will be garniſhed with flowers; which when double, and of good colours, will make a fine appearance, eſpecially if the various colours are properly intermixed.

They are propagated by ſeeds, which, as hath been already obſerved, ſhould be carefully ſaved from thoſe plants whoſe flowers are the moſt double, and of the beſt colours. If theſe are preſerved in their capſules until ſpring, the ſeeds will be better, provided they are gathered very dry, and care be taken that no damp comes to them in winter, which will cauſe their covers to be mouldy, and thereby ſpoil the ſeeds.

The ſeeds ſhould be ſown on a bed of light earth, about the middle of April, which muſt be covered about half an inch deep, with the ſame light earth; ſome perſons ſow them in ſhallow drills, and others ſcatter the ſeeds thinly over the whole bed. When they are ſown in the former method, the plants generally come up thick, ſo will require to be tranſplanted ſooner than thoſe which are ſown in the latter. By the firſt, the ſeeds may be more equally covered, and kept clean with leſs trouble, becauſe the ground between the drills may be hoed. When the plants have put out ſix or eight leaves, they ſhould be tranſplanted into nurſery-beds, at a foot diſtance from each other, obſerving to water them until they have taken good root; after which they will require no farther care, but to keep them clean from weeds till October, when they ſhould be tranſplanted where they are to remain.

Some perſons let their plants remain a year longer in the nurſery-beds to ſee their flowers, before they remove them to the flower-garden; but when this is intended, the plants ſhould be planted at a greater diſtance in the nurſery-beds, otherwiſe they will not have room to grow. However, I have always choſen to remove my plants the firſt autumn, for young plants more ſurely grow, than thoſe which are older; and if the ſeeds are carefully ſaved, there will not be one in ten of the plants come ſingle or of bad colours.

ALCHEMILLA, Ladies Mantle.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is ſpread open at the brim, and cut into eight ſegments. There are no petals to the flower, but the center of the empalement is occupied by the oval germen, into which is inſerted a long ſtyle, crowned with a globular ſtigma: this is attended by four erect ſtamina reſting on the brim of the empalement, and crowned with roundiſh ſummits; the germen afterwards turns to a ſingle compreſſed ſeed.

Dr. Linnæus ranges this genus in the firſt ſection of his fourth claſs of plants, entitled Tetrandria monogynia, the flowers having four ſtamina and one ſtyle.

The SPECIES are,

1. ALCHEMILLA (*Vulgaris*) foliis lobatis ſerratis, ſegmentis involucro acuto. *The common Ladies Mantle.* C. B. P. 319.
2. ALCHEMILLA foliis lobatis ſericeis acutè ſerratis, ſegmentis involucro ſubrotundis. *Small ſilvery Ladies Mantle with lobated leaves ſharply ſerrated, and the ſegments of the involucrum cut into roundiſh ſegments.* Alchemilla Alpina pubeſcens minor. Tourn. Inſt. R. H. 508.
3. ALCHEMILLA (*Alpina*) foliis digitatis ſerratis. Flor. Lapp. 61. *Silvery Alpine Ladies Mantle with handed leaves.* Alchemilla perennis incana argentea ſive ſericea ſatinum provocans. Mor. Hiſt. 2. p. 195.
4. ALCHEMILLA (*Pentaphylla*) foliis quinatis multifidis glabris. Lin. Sp. Plant. 123. *Smooth five-leaved Ladies Mantle, cut into many ſegments.* Alchemilla Alpina

pentaphyllea minima lobis fimbriatis. Bocc. Muſc. 1. p. 18.

The firſt ſort grows naturally in moiſt meadows in ſeveral parts of England, but is not very common near London: the roots are compoſed of many thick fibres, which ſpread greatly when they are in a proper ſoil; the leaves riſe immediately from the root, ſuſtained by long foot-ſtalks; they are roundiſh, and ſcalloped round the borders into ſeven or eight lobes, ſhaped ſomewhat like the Ladies ſcalloped Mantles, from whence it had its name. The flower-ſtems ariſe between the leaves about a foot high, which divide into many branches, and are at each joint garniſhed with one ſmall leaf, ſhaped like thoſe below; the flowers are compoſed of an herbaceous empalement, in the center of which is the ſtyle attended by four ſtamina, crowned with yellow ſummits; ſo that the only beauty of this plant is in the leaves, which are uſed in medicine, and are eſteemed to be vulnerary, drying and binding, and of great force to ſtop inward bleeding.

The ſecond ſort is much ſmaller than the firſt, the leaves are much whiter and appear ſilky; the flower-ſtems do not branch out ſo much, nor are the flowers produced in ſo large cluſters: their empalement is broader, and the ſegments more obtuſe than thoſe of the firſt ſort.

The third ſort grows naturally on the mountains in Yorkſhire, Weſtmoreland, and Cumberland, generally upon moiſt boggy places. It is alſo a native of Sweden and Denmark, the Alps, and other cold parts of Europe, and is admitted into gardens for the ſake of variety. The leaves of this ſort are very white, and deeply cut into five parts like a hand; the flower-ſtems ſeldom riſe more than ſix inches high, nor do the flowers make a better appearance than the other ſorts.

The fourth ſort grows naturally in Sweden, Lapland, and other cold countries, ſo is only to be found in ſome few curious botanic gardens in this country. Theſe are all abiding plants, which have perennial roots and annual ſtalks, which periſh in autumn. They may be propagated by parting their roots; the beſt time for doing this is in the autumn, that their roots may be eſtabliſhed before the drying winds of the ſpring come on. They ſhould have a moiſt ſoil and a ſhady ſituation, otherwiſe they will not thrive in the ſouthern parts of England. When they are propagated by ſeeds, they ſhould be ſown in the autumn; for when they are ſown in the ſpring, they ſeldom grow the firſt year. They ſhould be ſown on a ſhady moiſt border, and when the plants come up, they will require no other care but to be kept clean from weeds.

ALDER-TREE. See ALNUS.

ALETRIS.

The CHARACTERS are,

The flower has no empalement, but hath one oblong oval petal, cut into ſix ſegments at the brim, and are permanent; it hath ſix awl-ſhaped ſtamina the length of the corolla, whoſe baſe are inſerted in the ſegments; theſe are crowned by oblong erect ſummits, and an oval germen ſupporting an awl-ſhaped ſtyle the length of the ſtamina, crowned by a trifid ſtigma. The germen afterward becomes an oval three-cornered capſule with three cells, filled with angular ſeeds.

This genus of plants is ranged in Linnæus's firſt ſection of his ſixth claſs, the flowers having ſix ſtamina and one ſtyle.

The SPECIES are,

1. ALETRIS (*Farinoſa*) acaulis, foliis lanceolatis membranaceis, floribus alternis. Lin. Sp. 456. *Aletris without ſtalks, ſpear-ſhaped membranaceous leaves, and flowers placed alternate.* Hyacinthus caule nodo, foliis linguiformibus acuminatis dentatis. Flor. Virg. 38.
2. ALETRIS (*Capenſis*) acaulis, foliis lanceolatis undulatis, ſpica ovata, floribus nutantibus. Lin. Sp. 456. *Aletris without ſtalks, waved ſpear-ſhaped leaves, and an oval ſpike of alternate flowers.*

3. ALETRIS (*Hyacinthoides*) acaulis, foliis lanceolatis carnoſis, floribus geminatis. Lin. Sp. 456. *Aletris without ſtalks, fleſhy ſpear-ſhaped leaves, and flowers ſet by pairs.*
4. ALETRIS (*Zeylanica*) acaulis, foliis lanceolatis planis erectis radicalibus. *Aletris without ſtalks, and plain, ſpear-ſhaped, erect leaves riſing from the root.*
5. ALETRIS (*Fragrans*) cauleſcens, foliis lanceolatis amplexicaulibus. *Stalky Aletris, with ſpear-ſhaped leaves embracing it.* Aloe Africana arboreſcens, floribus albis fragrantiſſimis. Hort. Amſt. 2. tab. 4.

The firſt ſort grows naturally in North America; it hath a tuberoſe root, from which ariſe ſeveral ſpear-ſhaped leaves, and a naked ſtalk ſupporting a ſpike of flowers placed alternate, of a greeniſh white colour; theſe appear in June, but are rarely ſucceeded by ſeeds in England.

This plant is tolerably hardy, ſo may be preſerved thro' the winter, if ſheltered under a hot-bed frame; but as the ſeeds do not ripen here, and the roots increaſe but ſlowly, the plants are at preſent rare in England.

The ſecond ſort grows naturally at the Cape of Good Hope. This is a low plant, ſeldom riſing more than a foot high; the leaves are ſpear-ſhaped and undulated; the foot-ſtalks of the flower ariſe from the root, which ſuſtain ſeveral white nodding flowers, in ſhape ſomewhat like thoſe of the Hyacinth.

The roots of this ſort muſt be planted in pots filled with light earth, that they may be ſheltered in a dry airy glaſs-caſe in winter, being too tender to thrive in the open air in England; therefore the pots ſhould be removed into ſhelter in October, and during the winter ſeaſon, they ſhould be ſparingly watered. In May they ſhould be placed abroad in a ſheltered ſituation, and in warm weather muſt be frequently refreſhed with water; with this management the plants will flower; but as they do not perfect their ſeeds here, nor do they increaſe faſt by roots, the plants are ſcarce in England.

The third ſort has been long preſerved in the Engliſh gardens, and has been known by the title of Guinea Aloe; this hath thick fleſhy roots like thoſe of the Flag Iris, which creep far where they have room. The leaves ariſe ſingly from the root, and are near one foot and a half long, ſtiff, waved, and have no foot-ſtalks, ariſing immediately from the root, as do alſo the foot-ſtalks of the flowers, which when the roots are ſtrong, are often a foot and a half high, garniſhed great part of their height with clear white flowers, ſhaped like thoſe of the Hyacinth, whoſe brims are cut into ſix ſegments, which are reflexed; theſe ſeldom continue in beauty more than two or three days, and are never ſucceeded by ſeeds here.

The fourth ſort is alſo pretty common, in gardens where there are conveniencies for preſerving exotic plants. This hath fleſhy creeping roots, which multiply greatly. The whole plant ſeldom riſes more than ſix inches high: the leaves are plain and upright, ariſing without foot-ſtalks; but as I have never ſeen any flowers produced on the plants, I can give no deſcription of them, but have followed Dr. Linnæus in ranging it, though I have great reaſon to believe he has not ſeen the flower; for he ſuppoſes this to be a variety of the third ſort, which no perſon who is acquainted with the two plants can ever admit. This has been always known by the title of Ceylon Aloe.

The fifth ſort riſes with an herbaceous ſtalk to the height of eight or ten feet high, having many joints, and is adorned toward the top with a head of ſpear-ſhaped thin leaves, which are of a deep green colour and reflexed at their ends, embracing the ſtalks with their baſe. The foot-ſtalks of the flower ariſe from the center of the heads, which are generally two feet high, branching out on each ſide, and fully garniſhed with white flowers, in ſhape ſomewhat like thoſe of the third ſort; but theſe open only in the evening, when they emit a moſt fragrant odour, but cloſe again in the morning, and are not of long duration; but theſe are ſometimes ſucceeded by ſeeds, which, although fair to appearance, yet I could never raiſe any plants from them; but they are eaſily propagated from the ſide heads, which they put out after flowering.

The laſt three ſorts are too tender to live through the winter in England, unleſs they are placed in a warm ſtove; nor will the third and fifth ſorts produce their flowers, if the plants are not plunged into a tan-bed; for although the plants may be preſerved in a dry ſtove, yet thoſe make but little progreſs there; whereas when they are in a tan-bed, they will advance as much in one year as the other will in three or four; the leaves will alſo be much larger, and the whole plant much ſtronger. The third ſort will ſometimes flower in a dry ſtove, but the flower-ſtems will be weak, and do not produce half ſo many flowers as when in tan; but the fifth has not yet flowered here when kept in the dry ſtove.

The third and fourth ſorts propagate very faſt by their creeping roots, which ſend up many heads; theſe may be cut off in June, and laid in the ſtove for a fortnight, that the part wounded may be healed over; then they ſhould be planted in ſmall pots, filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark, giving them but little water till they have put out good roots; then they muſt be treated like other tender ſucculent plants, never ſetting them abroad in ſummer.

The heads of the fifth ſort when taken from the ſtems ſhould be laid in the ſtove a week, for their wounds to heal, then ſhould be planted in pots and treated as the other.

ALESANDER, or ALEXANDER. See SMYRNIUM.

ALKEKENGI. See PHYSALIS.

ALLELUJAH. See OXALIS.

ALLIARIA. See HESPERIS.

ALLIUM [of Ἀλέω, *Gr.* to avoid or ſhun, becauſe many ſhun the ſmell of it], Garlick.

The CHARACTERS are,

The flowers are included in one common ſpatha, which becomes dry; the flower is compoſed of ſix oblong, erect, concave petals, and ſix awl-ſhaped ſtamina, which extend the length of the petals, and are crowned with oblong ſummits. In the center is ſituated a ſhort three-cornered germen, ſupporting a ſingle ſtyle, crowned by an acute ſtigma. The germen afterward becomes an obtuſe three-cornered capſule, opening into three parts, having three cells, filled with roundiſh ſeeds.

The SPECIES are,

1. ALLIUM (*Sativum*) caule planifolio bulbifero, bulbo compoſito, ſtaminibus tricuſpidatis. Hort. Upſal. 76. *Common manured Garlick.* Allium ſativum. C. B. P.
2. ALLIUM (*Scorodopraſum*) caule planifolio bulbifero, foliis crenulatis vaginis ancipitibus ſtaminibus tricuſpidatis. Hort. Upſal. 77. *The Rocambole.* Allium ſativum alterum ſive allioprafum caulis ſummo circumlocuto. C. B. P. 73.
3. ALLIUM (*Urſinum*) ſcapo nudo ſemicylindrico foliis lanceolatis petiolatis umbellâ faſtigiatâ. Lin. Sp. Plant. 300. *Broad-leaved wild Garlick, or Ramſons.* Allium ſylveſtre latifolium. C. B. P.
4. ALLIUM (*Lineare*) caule planifolio umbellifero umbellâ globoſâ ſtaminibus tricuſpidatis corolla duplo longioribus. Lin. Sp. Plant. 294. *Great round-headed Garlick of the Holm Iſlands.* Allium Holmenſe ſphærico capite. Raii Syn. 370.
5. ALLIUM (*Moly*) ſcapo nudo ſubcylindrico foliis lanceolatis ſeſſilibus umbellâ faſtigiatâ. Hort. Upſal. 76. *The yellow Moly.* Allium latifolium luteum. Tourn. Inſt. 384.
6. ALLIUM (*Magicum*) caule planifolio umbellifero ramulo bulbifero ſtaminibus ſimplicibus. Lin. Sp. Plant. 296. *Great broad-leaved Moly with Lily flowers.* Allium latifolium liliflorum. Tourn. Inſt. 384.
7. ALLIUM (*Obliquum*) caule planifolio umbellifero ſtaminibus filiformibus flore triplo longioribus foliis obliquis. Lin. Sp. Plant. 296. *Umbelliferous Garlick with plain leaves, ſlender ſtamina, which are three times the length*

length of the flower, and oblique leaves. Allium radice tunicatâ foliis planis linearibus caulinis capitulo umbellato. Flor. Siber. 1. p. 49.

8. Allium (*Ramoſum*) caule ſubplanifolio umbellifero ſtaminibus ſubulatis longioribus umbellâ globosâ foliis linearibus ſubconvexis. Lin. Sp. Pl. 296. *Umbelliferous Garlick with half plain leaves, long awl-ſhaped ſtamina, globular umbels, and narrow convex leaves.*

9. Allium (*Roſeum*) ſcapo nudo umbellifero, pedicellis brevibus, petalis ovalibus, ſtaminibus breviſſimis, foliis linearibus. Lin. Sp. 432. *Garlick with a naked umbelliferous ſtalk, ſhort foot-ſtalks, oval petals to the flower, very ſhort ſtamina, and linear leaves.* Allium ſylveſtre ſive moly minus, roſeo amplo flore. Magnol. 11.

10. Allium (*Arenarium*) caule planifolio bulbifero vaginis teretibus ſpathâ muticâ ſtaminibus tricuſpidatis. H. Scan. 227. *Bulb-bearing Garlick, with plain leaves, a taper vagina, and three pointed ſtamina.*

11. Allium (*Carinatum*) caule planifolio bulbifero ſtaminibus ſubulatis. Lin. Sp. Plant. 297. *Bulb-bearing garlick with plain leaves, and awl-ſhaped ſtamina.* Allium montanum bicorne anguſtifolium flore dilutè purpuraſcente. C. B. P. 74.

12. Allium (*Sphærocephalon*) caule terteifolio umbellifero, foliis ſemiteretibus, ſtaminibus tricuſpidatis corolla longioribus. Lin. Sp. 426. *Umbelliferous Garlick, with taper leaves which are longer than the petals.* Allium ſive moly montanum purpureo flore. Cluſ. Hiſt. 1. p. 195.

13. Allium (*Flavum*) caule teretifolio umbellifero, floribus pendulis, petalis ovatis, ſtaminibus corolla longioribus. Lin. Sp. 428. *Umbelliferous Garlick, with taper leaves and pendulous flowers, having oval petals, and ſtamina longer than the corolla.* Allium montanum bicorne flore pallido odore. C. B. P. 75.

14. Allium (*Seneſcens*) ſcapo nudo ancipiti foliis linearibus ſubtus convexis lævibus umbellâ ſubrotundâ ſtaminibus ſubulatis. Hort. Upſal. 79. *Greater Mountain Garlick with leaves like Narciſſus.* Allium montanum foliis Narciſſi majus. C. B. P. 75.

15. Allium (*Anguloſum*) ſcapo nudo ancipiti foliis linearibus canaliculatis ſubtus ſubangulatis umbellâ faſtigiatâ. Hort. Upſal. 79. *Garlick with a naked ſtalk, narrow hollow leaves, which are angular on their lower ſide, and a compact umbel.* Allium montanum foliis Narciſſi minus. C. B. P. 75.

16. Allium (*Subhirſutum*) caule planifolio umbellifero foliis inferioribus hirſutis ſtaminibus ſubulatis. Lin. Sp. Plant. 295. *Umbelliferous Garlick with hairy under leaves, and awl-ſhaped ſtamina, commonly called Dioſcoridis Moly.* Moly anguſtifolium umbellatum. C. B. P. 75.

17. Allium (*Victioralis*) umbella rotundata, ſtaminibus lanceolatis corolla longioribus, foliis ellipticis. Lin. Mat. Med. 163. *Umbelliferous Garlick with round umbels, ſpear-ſhaped ſtamina longer than the corolla, and elliptical leaves.* Allium montanum latifolium maculatum. C. B. P. 74.

18. Allium (*Deſcendens*) caule ſubteretifolio umbellifero, pedunculis exterioribus brevioribus, ſtaminibus tricuſpidatis. Lin. Sp. 427. *Umbelliferous Garlick with a half taper leaf, and three pointed ſtamina.* Allium moly latifolium, capite ſphærico, flore purpureo. Rudb.

19. Allium (*Canadenſe*) ſcapo nudo tereti, foliis linearibus capitulo bulbifero. Kalm. It. *Canada Garlick with a naked taper ſtalk, linear leaves, and heads bearing bulbs.* Allium bulbiferum Virginianum. Boerh. Ind. Alt. 2. 146.

20. Allium (*Triquetrum*) ſcapo nudo foliis triquetris, ſtaminibus ſimplicibus. Lin. Sp. 431. *Garlick with a naked ſtalk, triangular leaves, and ſimple ſtamina.* Moly parvum caule triangulo. C. B. P. 75.

We ſhall not bring under this genus the Cepa and Porrum, as is done by Dr. Linnæus, leſt by too cloſely adopting his ſyſtem, we may render this work leſs intelligible to the practical gardener, and ſuch other perſons who may delight themſelves in the culture of a kitchen-garden; but not having ſtudied the ſcience of botany, may not ſo readily turn to thoſe articles, therefore we ſhall inſert their culture under their former titles.

The two firſt ſpecies are eaſily propagated by planting the cloves, or ſmall bulbs, in the ſpring, in beds about four or five inches diſtance from each other, keeping them clean from weeds. About the beginning of June, the leaves of the firſt ſort ſhould be tied in knots, to prevent their ſpindling, or running to ſeed, which will greatly enlarge the bulb. In the middle of July, the leaves will begin to wither and decay, at which time they ſhould be taken out of the ground, and hanged up in a dry room, to prevent their rotting, and may be thus preſerved for winter uſe.

The roots of the ſecond ſort may remain in the ground till the leaves are decayed, when their bulbs may be taken up and dried, to be preſerved for uſe during the winter ſeaſon; but ſome of the roots may be at the ſame time planted again for the ſucceeding year; for this ſort requires to be planted in autumn, eſpecially on dry ground, otherwiſe their bulbs will not be large.

The third ſort was formerly in greater eſteem than at preſent, it being rarely cultivated in gardens, but is found wild in moiſt ſhady places in many parts of England; and may be cultivated by planting the roots in a moiſt ſhady border, at almoſt any time of the year; but the beſt ſeaſon is in July, juſt as the green leaves are decaying.

The fourth ſort grows naturally in the Holm Iſlands, from whence it has been tranſplanted into ſeveral gardens, where it is preſerved more for the ſake of variety than uſe.

The eleventh and thirteenth ſorts grow wild in the northern parts of England, but are by the curious in botany preſerved in their gardens. Theſe are very hardy, and may be removed in July or Auguſt, when their leaves begin to decay, and will thrive in almoſt any ſoil or ſituation.

The fifth ſort was formerly preſerved in gardens for the ſake of its yellow flowers, but having a very ſtrong Garlick ſcent, moſt people have rooted it out of their gardens.

The ſixth ſort is alſo preſerved by many perſons in their gardens for the ſake of variety, but as this hath a very ſtrong ſcent, ſo it is not often admitted to the flower-garden.

The ninth and twelfth ſorts are ſometimes permitted to have a place in gardens for the ſake of variety.

The ſeventh, eighth, and tenth ſorts grow naturally in Tartary and Siberia, from whence their ſeeds were ſent to Peterſburgh, and from thence ſome of the botanic gardens have been ſupplied with ſeeds; theſe are only preſerved for the ſake of variety.

The fourteenth, fifteenth, and ſixteenth ſorts, have been planted in gardens for the variety of their flowers, but of late years moſt people have turned them out, to make room for better ſorts. But the ſixteenth multiplies ſo faſt by offſets, as to render it difficult to extirpate them, when they have remained any time in a garden.

This produces large umbels of white flowers, growing on ſtalks about ten inches high; the time of flowering is in April and May.

The nineteenth ſort was brought from Virginia, and is preſerved in botanic gardens for variety's ſake, but has no great beauty; it is very hardy, and will thrive in the open air very well; and is propagated by its bulbs, which are produced in plenty on the top of the ſtalks.

They are all of them very hardy, and will thrive in almoſt any ſoil or ſituation, and are eaſily propagated either by their roots, or from ſeeds: if from the roots, the beſt time is in autumn, that they may take good root in the ground before the ſpring, which is neceſſary, in order to have them flower ſtrong the following ſummer. If they are propagated by ſeeds, they may be ſown on a border of common earth, either in autumn, ſoon after the ſeeds are ripe, or in the ſpring following, and will require no farther care, but to keep

keep them clear from weeds; in the following autumn, the plants may be tranſplanted into the borders where they are to remain for good.

The greateſt part of theſe plants produce their flowers in May, June, and July.

The yellow Moly will grow about a foot high; and having ſome beauty in the flowers, is worthy of a place in ſuch borders of the flower-garden, where few better things will thrive. Theſe increaſe plentifully both by roots and ſeeds.

The ſixth and ſeventeenth ſorts grow upwards of two feet high, and when they are in flower, make a pretty appearance; and as they are not troubleſome to keep, may be allowed a place in the borders of the flower-garden.

All the other ſorts are equally hardy, and will grow in any ſoil or ſituation; but as they have little beauty, they are rarely preſerved, except in botanic gardens for the ſake of variety.

ALMOND-TREE. See AMYGDALUS.

ALMOND-DWARF. See PERSICA.

ALNUS. See BETULA.

ALNUS NIGRA BACCIFERA. See FRANGULA.

ALOE [*Gr.* Ἀλοὴ].

The CHARACTERS are,

The flower is naked, having no empalement; it is of one leaf, having a long ſmooth tube, which is divided at the top into ſix parts, ſpreading open; it hath ſix awl-ſhaped ſtamina, which are inſerted at their baſe to the germen, and are extended the length of the tube; theſe are crowned with oblong ſummits; in the center is ſituated the oval germen, ſupporting a ſingle ſtyle, which is of the ſame length with the ſtamina, crowned with a trifid ſtigma. The germen afterward becomes an oblong capſule, having three furrows, which is divided into three cells opening in three parts, and filled with angular ſeeds.

This genus of plants is by Dr. Linnæus ranged in the firſt ſection of his ſixth claſs, titled Hexandria monogynia, from the flowers having ſix ſtamina and one ſtyle.

The SPECIES are,

1. ALOE (*Mitriformis*) floribus pedunculatis cernuis corymboſis ſub-cylindricis. Lin. Sp. Plant. 319. i. e. *Aloe with dependent flowers, having foot-ſtalks which are ranged in a cylindrical corymbus.* Aloe Africana mitriformis ſpinoſa. Hort. Elth. 1. p. 21. Mitre-ſhaped Aloe.
2. ALOE (*Barbadenſis*) foliis dentatis erectis ſucculentibus ſubulatis, floribus luteis in thyrſo dependentibus. *Aloe with erect, ſucculent, awl-ſhaped leaves, and yellow flowers growing in a looſe ſpike, hanging downward.* Aloe vulgaris. C. B. P. 386.
3. ALOE (*Arboreſcens*) foliis amplexicaulibus reflexis, margine dentatis, floribus cylindricis caule fruticoſa. *Aloe with leaves embracing the ſtalks, which are reflexed and indented on their edges, flowers growing cylindrical, and a ſhrubby ſtalk.* Aloe Africana cauleſcens foliis glaucis caulem amplectantibus. H. Amſt. Commonly called Sword Aloe.
4. ALOE (*Africana*) foliis latioribus amplexicaulibus, margine & dorſo ſpinoſis, floribus ſpicatis, caule fruticoſo. *Aloe with broader leaves embracing the ſtalks, whoſe edges and back are ſet with ſpines, flowers growing in ſpikes, and a ſhrubby ſtalk.* Aloe Africana caulescens foliis minùs glaucis dorſi parte ſupremâ ſpinoſa. Com. Præl. 68.
5. ALOE (*Diſticha*) foliis latiſſimis amplexicaulibus maculatis, margine ſpinoſis floribus umbellatis. *Aloe with very broad ſpotted leaves embracing the ſtalk, whoſe edges are ſet with ſpines and flowers, growing in an umbel.* Aloe Africana caulescens foliis ſpinoſis maculis ab utrâque parte albicantibus notatis. Hort. Amſtel. 2. p. 9. by ſome called the Sope Aloe, and by others Carolina Aloe.
6. ALOE (*Obſcura*) foliis latioribus amplexicaulibus maculatis margine ſpinoſis floribus ſpicatis. *Aloe with broad ſpotted leaves embracing the ſtalks, whoſe edges have ſpines, and flowers growing in a ſpike.* Aloe Africana caulescens foliis ſpinoſis maculis ab utrâque parte albicantibus obſcurioribus magis glaucis quam præcedens. Boerh. Ind.
7. ALOE (*Plicatilis*) foliis enſiformibus inermis ancipitibus floribus laxè ſpicatis caule fruticoſo. *Aloe with ſword-ſhaped ſmooth leaves, ſtanding two ways, the flowers growing in looſe ſpikes, and a ſhrubby ſtalk.* Aloe Africana arboreſcens montana non ſpinoſa folio longiſſimo plicatili flore rubro. Com. Hort. Amſt. 2. p. 5.
8. ALOE (*Brevioribus*) foliis amplexicaulibus utrâque ſpinoſis, floribus ſpicatis. *Aloe with leaves embracing the ſtalks, which are prickly on every ſide, and flowers growing in ſpikes.* Aloe Africana caulescens foliis glaucis breviſſimis foliorum parte internâ & externâ nonnihil ſpinoſa. Com. Præl. 71.
9. ALOE (*Variegata*) floribus pedunculatis cernuis racemoſis priſmaticis ore patulo æquali. Lin. Sp. Plant. 321. *Aloe with hanging flowers, having foot-ſtalks, and ſpreading equally at the brim.* Aloe Africana humilis foliis ex albo & viridi variegatis. Com. Præl. 79. *commonly called Partridge-breaſt Aloe.*
10. ALOE foliis erectis ſubulatis radicatis undique inerme ſpinoſis. Hort. Cliff. 131. *Aloe with erect awl-ſhaped leaves, ſet with ſoft ſpines on every part.* Aloe Africana humilis ſpinis inermibus & verrucoſis obſita. Com. Præl. 77. *commonly called Hedge-hog Aloe.*
11. ALOE (*Viſcoſa*) floribus ſeſſilibus infundibuli formibus bilabiatis laciniis quinque revolutis ſumma erecta. Lin. Sp. Plant. 322. *Aloe with funnel-ſhaped flowers, without foot-ſtalks, opening in two lips, and cut into five ſegments, which turn backward, and are erect at the top.* Aloe Africana erecta triangularis & triangulari folio viſcoſo. Com. Præl. 82.
12. ALOE (*Spiralis*) floribus ſeſſilibus ovatis crenatis ſegmentis interioribus conniventibus. Lin. Sp. Plant. 322. *Aloe with oval crenated flowers, without foot-ſtalks, and the interior ſegments cloſing together.* Aloe Africana erecta rotunda folio parvo & in acumen acutiſſimum exeunte. Com. Præl. 83.
13. ALOE (*Linguiforme*) ſeſſilis foliis lingui formibus maculatis floribus pedunculatis cernuis. *Aloe with dwarf, tongue-ſhaped, ſpotted leaves, and hanging flowers, which have foot-ſtalks.* Aloe Africana flore rubro folio maculis albicantibus ab utrâque parte notato. H. Amſt. 2. p. 15. *commonly called Tongue Aloe.*
14. ALOE (*Margaritifera*) floribus ſeſſilibus bilabiatis labio ſuperiore erecto inferiore patente. Lin. Sp. Plant. 322. *Aloe with ſeſſile flowers, gaping with two lips, the upper being erect, and the under ſpreading.* Aloe Africana folio in ſummitate triangulari margaritiferâ flore ſubviridi. Com. Hort. Amſt. 2. p. 19. *commonly called large Pearl Aloe.*
15. ALOE (*Vera*) foliis longiſſimis & anguſtiſſimis marginibus ſpinoſis, floribus ſpicatis. *Aloe with very long narrow leaves; having ſpines on their hedges, and flowers growing in ſpikes.* Aloe Indiæ Orientalis, ſerrata ſuccotrina vera flore Phœnicio. Hort. Beaumont. *The Succotrine Aloe.*
16. ALOE (*Glauca*) caule brevi, foliis amplexicauiibus bifariam verſis ſpinis marginibus erectis floribus capitatis. *Aloe with a ſhort ſtalk, leaves ſtanding two ways, which embrace the ſtalk; the ſpines on the edges erect, and flowers growing in a head.* Aloe Africana caulescens foliis glaucis brevioribus foliorum parte internâ & externâ nonnihil ſpinoſa. Com. Præl. 71.
17. ALOE (*Arachnoidea*) ſeſſilis foliis brevioribus planis carnoſis apice triquetris marginibus inerme ſpinoſis. *Low Aloe with ſhort, plain, fleſhy leaves, triangular at their ends, and borders ſet with ſoft ſpines.* Aloe Africana humilis arachnoidea. Com. Præl. 72. *commonly called Cobweb Aloe.*
18. ALOE (*Herbacea*) foliis ovato-lanceolatis carnoſis apice triquetris angulis inerme dentatis. Hort. Cliff. 131. *Aloe with oval, ſpear-ſhaped, fleſhly leaves, having three angles at their extremities, which are indented and ſet with ſoft ſpines.* Aloe Africana minima atro-viridis ſpinis herbaceis numeroſis ornata. Boerh. Ind. Alt. 2. p. 131.
19. ALOE (*Retuſa*) floribus ſeſſilibus triquetris bilabiatis labio inferiore revoluto. Lin. Sp. Plant. 322. *Aloe with flowers divided into three parts, the under lip being turned*

turned back. Aloe Africana breviſſimo craſſiſſimoque folio flore ſubviridi. Hort. Amſt. 2. p. 11. commonly called Cuſhion Aloe.

20. Aloe (*Verrucoſa*) ſeſſilis foliis carinatis utrâque verrucoſis bifariam verſis. *Low Aloe with keel-ſhaped leaves, warted on every part, and ſtanding two ways.* Aloe Africana foliis longis conjugatis ſupra cavis margaritiferis flore rubro elegantiſſimo. Boerh. Ind. Alt. p. 2, 131. commonly called Pearl-tongue Aloe.

21. Aloe (*Carinata*) ſeſſilis foliis carinatis verrucoſis apice triquetris carnoſis. *Low Aloe with fleſhy, keel-ſhaped, ſpotted leaves, which are triangular at their extremities.* This is the Aloe Africana flore rubro folio triangulari verrucis & ab utrâque parte albicantibus notato. Hort. Amſt. 2. p. 17.

22. Aloe (*Ferox*) foliis amplexicaulibus nigricantibus undique ſpinoſis. *Aloe with dark green leaves embracing the ſtalks, which are beſet with ſpines on every ſide.* Aloe vera coſta ſpinoſa. Munt. Phyt. commonly called Aloe ferox.

23. Aloe (*Uvaria*) floribus ſeſſilibus reflexis imbricatis priſmaticis. Lin. Sp. Plant. 323. *Aloe with reflexed flowers growing cloſe to the ſtalk, in form of a priſm, lying over each other like tiles on a houſe.* Aloe Africana folio triangulari longiſſimo & anguſtiſſimo floribus luteis fœtidis. Hort. Amſt. 2. p. 29. commonly called Iris Uvaria.

The firſt ſort of Aloe grows with an upright ſtalk, to the height of five or ſix feet, the leaves cloſely embrace the ſtalks; they are thick, ſucculent, broad at their baſe, growing narrower, and ending in a point, of a dark green colour, and have ſpines on the edges, as alſo a few on their upper ſurface; the leaves ſtand erect, and draw together towards the top, where they form the reſemblance of a mitre, from whence it is called the Mitre Aloe. The flower-ſtem riſes about three feet high, on the top of which the flowers come out in a ſort of globular ſpike, but afterwards is formed into a cylindrical ſpike: theſe have long foot-ſtalks, which come out horizontally, and the flowers hang downward; they are tubulous, and cut into ſix unequal ſegments to the bottom, three being alternately broader than the others. There are ſix ſtamina, three of which are as long as the tube of the flower, the other three are ſhorter. Theſe are crowned with flat oblong ſummits of a gold colour. The three-cornered germen is ſituated in the bottom of the flower, ſupporting a ſingle ſtyle, which is ſhorter than the ſtamina, having no ſtigma on the top. The tube of the flower is of a fine red colour, and the brim is of a pale green, ſo that it makes a pretty appearance when the ſpikes of flowers are large.

This ſort will live in a warm dry green-houſe in winter, and may be placed in the open air in ſummer, in a ſheltered ſituation; but the plants ſhould not have much wet, leſt it ſhould rot their ſtems. With this management the plants will not grow ſo faſt, as when they are placed in a ſtove, but they will be ſtronger, and their ſtems will ſupport their heads much better.

The ſecond ſort is very common in the iſlands of America, where the plants are propagated upon the pooreſt land, to obtain the Hepatic Aloes, which are brought to England, and uſed chiefly for horſes, being too coarſe for medicine.

The leaves of this ſort are about four inches broad at their baſe, where they are near two inches thick, and diminiſh gradually to a point, having a few indentures on their edges; the leaves are of a ſea-green colour, and when young are ſpotted with white. The flower-ſtem riſes near three feet high, and the flowers ſtand in a ſlender looſe ſpike, with very ſhort foot-ſtalks, hanging downwards. They are tubulous, and cut into ſix parts, of a bright yellow colour, and the ſtamina ſtand out beyond the tube. This never produces ſeed in England, and is too tender to live through the winter in our climate, in a common green-houſe, therefore it ſhould be placed in a moderate degree of warmth in that ſeaſon. I have known plants of this kind, which have had an oiled cloth tied about their roots, and hung up in a warm room more than two years, and afterwards planted in pots, which have grown very well, from whence the plant has been called Sempervivum by the inhabitants of America.

The third ſort will grow to the height of ten or twelve feet, with a ſtrong naked ſtem, the leaves growing at the top, which cloſely embrace the ſtalk; they are about two inches broad at their baſe, growing narrower to a point, and are reflexed, and indented on their edges, each being armed with a ſtrong crooked ſpine. The leaves are of a ſea-green colour, and very ſucculent. The flowers grow in a pyramidal ſpike, are tubulous, and of a bright red colour. Theſe are in beauty in November and December.

This ſort will live through the winter in a good green-houſe, but they will not flower unleſs they have a moderate ſhare of warmth, therefore the pots ſhould be removed into a ſtove in October, which ſhould not be kept above temperate heat, in which ſituation they ſeldom fail to flower.

The fourth ſort is ſomewhat like the third, but the leaves are broader, and have ſeveral ſpines on their backſide toward their extremities. The flowers of this grow in a looſer ſpike, and the plants never put out any ſuckers, ſo that it is very difficult to increaſe.

The fifth ſort ſeldom riſes much above two feet high, the leaves are very broad at their baſe, where they cloſely embrace the ſtalk, and gradually decreaſe to a point. The edges are ſet with ſharp ſpines, and the under leaves ſpread open horizontally every way; theſe are of a dark green colour ſpotted with white, ſomewhat reſembling the colour of ſoft ſope, from whence ſome have given it the title of Sope Aloe. The flowers grow in umbels on the tops of the ſtalks, which are of a beautiful red colour, and appear in Auguſt and September. This ſort is hardy, ſo may be kept in a common green-houſe in winter, and in the ſummer placed in the open air.

The ſixth ſort is ſomewhat like the fifth in its manner of growth, but the leaves are broader, of a lighter green colour; the edges and alſo the ſpines are of a copper colour, and the flowers grow in looſe ſpikes. This is as hardy as the former, ſo may be treated in the ſame manner. It flowers in September.

The ſeventh ſort grows to the height of ſix or ſeven feet, with a ſtrong ſtem, toward the upper part of which are produced two, three, or four heads, compoſed of long, compreſſed, pliable leaves, of a ſea-green colour, entire, and ending in obtuſe points; theſe are placed two ways, lying over each other with their edges the ſame way. The flowers are produced in ſhort looſe ſpikes, which are of a red colour, and appear at different times of the year.

The eighth ſort is an humble plant, ſeldom riſing more than a foot high; the leaves grow near the ground, which are broad at their baſe, where they embrace the ſtalk, and gradually diminiſh to a point; they are of a ſea-green colour, with ſome white ſpots; their edges, and alſo their upper parts below and above, are beſet with pretty ſharp ſpines; the flowers grow in looſe ſpikes, the tubulous part being red, and the brim of a light green colour.

The ninth ſort is a low plant, ſeldom riſing above eight inches high. The leaves of this are triangular, and turn back at their extremity; they are fleſhy and entire, their edges being very ſlightly ſawed. Theſe are curiouſly veined and ſpotted, ſomewhat like the feathers on a partridge's breaſt, from whence it had the name. The flowers grow in very looſe ſpikes, upon ſtalks about one foot high; they are of a fine red colour tipped with green. This will live in a good green-houſe through the winter.

I have raiſed a variety of this from ſeeds which I received from the Cape of Good Hope, with broader triangular leaves, which ſpread much more than thoſe of the former, and are not ſo beautifully ſpotted; the flower-ſtalks alſo grow much taller.

The tenth ſort is alſo a very low plant, never riſing to have ſtalks; the leaves are broad at their baſe, but are tapering to a point where they are triangular;

they are beſet on their edges, and both ſurfaces, with ſoft ſpines, very cloſely, from whence this plant had the name of Hedgehog Aloe. The flowers grow in a looſe head, on the top of the ſtalk, which is very thick, but ſeldom a foot high: they are of a fine red colour below, but of a pale green above. This ſort may be preſerved through the winter in a good green-houſe, and placed in the open air in ſummer.

The eleventh ſort grows near a foot high, and is furniſhed with triangular leaves, from the ground upward; theſe are of a dark green colour, and are placed in form of a triangle; the flowers grow thinly upon very ſlender foot-ſtalks, and are of an herbaceous colour, and their upper part turns backward. This ſort requires a moderate warmth in winter, ſo ſhould be placed in a cool part of the ſtove.

The twelfth ſort grows ſomewhat like the former, being beſet with leaves from the bottom, but theſe are rounder, and end in ſharp points; the flowers grow upon taller ſtalks, which branch out and grow in long cloſe ſpikes. There is a variety of this ſort which has been raiſed from ſeeds, which is much larger, the leaves thicker, and the flowers grow upon taller ſtalks, but this is only a ſeminal variety.

This ſort may be preſerved through the winter in a good green-houſe, but muſt have very little water given it during the cold weather.

The thirteenth ſort grows with its leaves near the ground, which are about ſix inches in length, and ſhaped like a tongue, from whence it had the title of Tongue Aloe. The flowers grow in ſlender looſe ſpikes, each hanging downward, of a red colour below, and green at the top. This is pretty hardy, ſo may be kept in a common green-houſe in winter, and ſet abroad in ſummer. There is a variety of this ſort, with leaves much more ſpotted.

The fourteenth ſort is of humble growth; the leaves come out on every ſide without order near the ground, they are thick, triangular at their ends, and cloſely ſtudded with white protuberances, from whence it was called Pearl Aloe. There is a ſmaller ſort of this which hath been long preſerved in the Engliſh gardens, but the manner of its flowering being the ſame, I ſuſpect it to be only a variety. This may be preſerved through the winter in a common green-houſe. It flowers at different ſeaſons of the year.

The fifteenth ſort is the true Succotrine Aloe, from whence the beſt ſort of Aloe for uſe in medicine is produced. This hath long, narrow, ſucculent leaves, which come out without any order, and form large heads. The ſtalks grow three or four feet high, and have two, three, and ſometimes four of theſe heads, branching out from it: the lower leaves ſpread out on every ſide, but the upper leaves turn inward toward the center; the flowers grow in long ſpikes, upon ſtalks about two feet high, each ſtanding on a pretty long foot-ſtalk; they are of a bright red colour tipped with green: theſe generally appear in the winter ſeaſon. This ſort may be preſerved through the winter in a warm green-houſe, but the plants ſo managed will not flower ſo frequently, as thoſe which have a moderate degree of warmth in winter.

The ſixteenth ſort reſembles the eighth in ſome particulars, but the leaves are much broader, and ſpread wide on every ſide; whereas thoſe of the eighth are ranged only two ways, and are narrow. This flowers but ſeldom, whereas the ſixteenth flowers annually in the ſpring, and may be kept through the winter in a common green-houſe.

The ſeventeenth ſort never riſes from the ground, but the leaves ſpread flat on the ſurface; theſe are plain, ſucculent, and triangular toward their end. The borders of the leaves, and alſo the ridge of the angle on their under ſide, are cloſely beſet with ſoft white ſpines. The flower-ſtalk riſes about a foot high, is very ſlender, and hath three or four ſmall herbaceous flowers ſtanding at a diſtance from each other. Theſe are tubulous, and cut into ſix parts at the brim, which turn backward. This ſort is tender, ſo ſhould be placed in winter in a moderate degree of heat, and muſt have little water. It ſeldom puts out offsets, ſo is generally increaſed by planting the leaves.

The eighteenth ſort is alſo a ſmall plant growing near the ground; the leaves of this ſort are almoſt cylindrical toward their baſe, but angular near their ends, and are ſet with ſhort ſoft ſpines at the angles: theſe leaves are ſhorter and of a darker green colour than thoſe of the former ſort, and the plants produce many ſuckers on every ſide. I have raiſed a variety of this from ſeeds, which hath ſhorter, whiter, and ſmoother leaves, but this hath not yet flowered. This will live in a common green-houſe in winter.

The nineteenth ſort hath very ſhort, thick, ſucculent leaves, which are compreſſed on their upper ſide like a cuſhion, from whence it had the name. This grows very cloſe to the ground, and puts out ſuckers on every ſide: the flowers grow on ſlender ſtalks, and are of an herbaceous colour. This may be preſerved through the winter in a good green-houſe, but ſhould have very little water during that ſeaſon, eſpecially when it hath no artificial heat.

The twentieth ſort hath long narrow tongue-ſhaped leaves, which are hollowed on their upper ſide, but keel-ſhaped below: theſe are cloſely ſtudded on every ſide, with ſmall white protuberances, from whence the plant hath had the title of Pearl Tongue Aloe. The flowers of this kind grow on pretty tall ſtalks, and form looſe ſpikes, each hanging downward: they are of a beautiful red colour, tipped with green. This ſort produces offsets in plenty, and is ſo hardy as to live in a common green-houſe through the winter. It flowers at different ſeaſons of the year.

The twenty-firſt ſort hath ſome reſemblance to the laſt, but the leaves are much broader and thicker; theſe ſpread out every way, and are not ſo concave on their upper ſurface, nor are the protuberances ſo large as thoſe of the former; the flowers are of a paler colour, and the ſpikes are ſhorter. I have raiſed plants from the ſeeds of this ſort, which have varied from the original, but none of them approached near the twentieth ſort. This is as hardy as the former ſort.

The twenty-ſecond ſort riſes to the height of eight or ten feet, with a ſtrong ſtem; the leaves grow on the top, which cloſely embrace the ſtalk; theſe come out irregularly, and ſpread every way; they are near four inches broad at their baſe, and diminiſh gradually to the top, where they end in a ſpine. They are of a dark green colour, and cloſely beſet with ſhort thick ſpines on every ſide. This ſort hath not as yet flowered in England, nor does it put out ſuckers, ſo that it is difficult to increaſe. It muſt have a warm green-houſe in winter, and very little water.

The twenty-third ſort hath very long, narrow, triangular leaves, ſhaped like thoſe of the Bull-ruſh; the flowers are produced in cloſe thick ſpikes, upon ſtalks near three feet high. They are of an Orange colour, having ſix yellow ſtamina, which come out beyond the tube of the flower; ſo that when the plants are ſtrong, and produce large ſpikes, they make a fine appearance. It flowers in Auguſt and September. There is a variety of this with narrower leaves, and longer ſpikes of flowers.

The ſoil in which theſe plants thrive beſt, is one half freſh light earth from a common (and if the turf is taken with it and rotted, it is much better); the reſt ſhould be white ſea ſand and ſifted lime rubbiſh, of each of theſe two, a fourth part; mix theſe together ſix or eight months at leaſt before it is uſed, obſerving to turn it over often in the time.

The middle of July is a very proper ſeaſon to ſhift theſe plants; at which time you may take them out of the pots, and with your fingers open the roots, and ſhake out as much of the earth as poſſible, taking off all dead or mouldy roots, but do not wound or break the young freſh ones: then fill the pot about three parts full of the above-mentioned earth, putting a few ſtones in the bottom of the pot, to drain off the moiſture; and after placing the roots of the plant in ſuch a manner as to prevent their interfering too much with each other, put in as much of the ſame earth, as

to fill the pot almoſt to the rim, and obſerve to ſhake the plant, ſo as to let the earth in between the roots; and then with your hand ſettle it cloſe to the roots of the plant, to keep it ſteady in the pot; then water them gently, and ſet them abroad in a ſhady place, where they may remain for three weeks, giving them gentle waterings, if the weather ſhould prove hot and dry.

Toward the latter end of September, in a dry day, remove them into the houſe again, obſerving to give them as much free open air as poſſible, while the weather is warm; but, if the nights are cool, you muſt ſhut up the glaſſes, and give them air only in the day; and, as the cold increaſes, you muſt not open the glaſſes, but obſerve to give them gentle waterings often, till the middle of October, when you muſt abate watering according to the heat of the houſe in which they are kept. For thoſe plants which are placed in a ſtove, will require to be watered at leaſt once a week, moſt part of the winter; whereas thoſe which are kept in a green-houſe without artificial heat, ſhould not be watered oftener in winter than once a month.

When theſe hardier ſorts of Aloes are placed abroad in ſummer, they ſhould have but little water given them; and if much rain ſhould fall during the time they are abroad, they ſhould be ſcreened from it: for when they imbibe much wet in ſummer, they frequently rot the following winter, eſpecially if they are not kept in a moderate warm air. Therefore, thoſe who chooſe to treat theſe plants hardily, ſhould be cautious of their receiving too much moiſture.

The tender ſorts ſhould conſtantly remain in the ſtove, or be removed in ſummer to an airy glaſs-caſe, where they may have free air in warm weather, but be protected from rain and cold. With this management the plants will thrive and increaſe, and ſuch of them as uſually flower, may be expected to produce them in beauty at their ſeaſons.

The hardier ſorts thrive much better when they are expoſed in ſummer, and ſecured from the cold and rain in winter, than if they are treated more tenderly. For when they are placed in a ſtove, they are kept growing all the winter, whereby they are drawn up weak; and although they will flower oftener when they have a moderate ſhare of heat, yet in two or three years, the plants will not appear ſo ſightly as thoſe which are more hardily treated.

The twenty-third ſort is hardy enough to live abroad in mild winters, if they are planted in a warm border and a dry ſoil; but as they are often deſtroyed in ſevere winters, it is proper to keep ſome plants in pots, which may be ſheltered in winter under a frame, to preſerve the ſort. This is propagated by ſeeds, which the plants generally produce in plenty: the ſeeds muſt be ſown in pots ſoon after they are ripe, and in winter ſhould be ſheltered under a common hot-bed frame: in the ſpring the plants will come up, when they ſhould be inured to bear the open air by degrees; and when they are large enough to remove, ſome of them ſhould be planted in pots, and the other in a warm border, where they will require to be ſheltered the following winter, as they will not have obtained ſufficient ſtrength to reſiſt the cold.

Moſt of theſe Aloes are increaſed by offsets, which ſhould be taken from the mother plant, at the time when they are ſhifted, and muſt be planted in very ſmall pots, filled with the ſame earth as was directed for the old plants; but if, in taking the ſuckers off, you obſerve that part which joined to the mother root to be moiſt, you muſt let them lie out of the ground in a ſhady dry place ſix or eight days to dry before they are planted, otherwiſe they are very ſubject to rot. After planting, let them remain in a ſhady place (as was before directed in ſhifting the old plants) for a fortnight, when you ſhould remove the tender kinds to a very moderate hot-bed, plunging the pots therein, which will greatly facilitate their taking new root; but obſerve to ſhade the glaſſes in the middle of the day, and to give them a great ſhare of air.

Toward the middle of Auguſt, begin to harden theſe young plants, by taking off the glaſſes in good weather, and by raiſing them at other times with props, that the air may freely enter the bed, which is abſolutely neceſſary for their growth, and to prepare them to be removed into the houſe, which muſt be done toward the end of September, and managed as before directed for the old plants.

The African Aloes, for the moſt part, afford plenty of ſuckers, by which they are increaſed; but thoſe few that do not, may be moſt of them propagated, by taking off ſome of the under leaves, laying them to dry for ten days or a fortnight, as was directed for the offsets; then plant them in the ſame ſoil as was directed for them, putting that part of the leaf which adhered to the old plant, about an inch, or an inch and a half (according to the ſize of the leaf) into the earth, giving them a little water to ſettle the earth about them; then plunge the pots into a moderate hot-bed, obſerving to ſcreen them from the violence of the ſun, and give them gentle refreſhings with water once a week: the beſt ſeaſon for this is in June, that they may puſh out heads before winter.

The ſecond ſort produces the Aloes commonly ſold in the ſhops for horſes, and is called Aloe Hepatica. But it is from the fifteenth ſort, the Succotrine, or beſt ſort of Aloes, is produced; which is done by cutting their leaves tranſverſly, and placing earthen veſſels under them to receive the juice which drops from theſe cut leaves; which juice, when inſpiſſated, becomes the Aloe which is uſed in medicine. But I believe in making the coarſer ſort of Aloes, they preſs the leaves, whereby a greater quantity of juice is obtained: but this is not near ſo fine as the other.

ALOE AMERICANA MURICATA. See AGAVE.

ALOIDES. See STRATIOTES.

ALOPECUROS [*Gr.* Ἀλοπέκηρος], Fox-tail, a kind of graſs.

ALPINIA.

This plant is ſo called after Proſper Alpinus, who was a famous botaniſt in his time, and travelled into Greece and Egypt, and has written two books in quarto of the plants of thoſe countries.

The CHARACTERS are,

It hath a trifid empalement, upon which reſts the germen. The flower is of one leaf, which is unequally divided at the top into four parts, and reſembles a perſonated flower; the upper ſegment which reſembles the helmet, and alſo the two ſide ſegments, are indented in the middle, and the lower one is divided into three parts at the brim; in the center is placed the round germen, ſupporting a ſingle ſtyle crowned with a three cornered ſtigma: this is attended by a ſingle ſtamina fixed to the tube of the flower, which is crowned with a very narrow ſummit. After the flower is paſt, the germen becomes an oval fleſhy fruit, divided into three parts, incloſing ſeveral oval ſeeds, which have tails.

This genus of plants, is by Dr. Linnæus ranged in his firſt claſs, which is entitled Monandria Monogynia, the flowers of which have but one ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

ALPINIA. Royen. Prod. 12. This is by father Plumier titled, Alpina racemoſa alba Cannacori foliis. Nov. Gen. 26. i. e. *White branching Alpina, with leaves like the flowering Reed.*

This plant is a native of the Weſt-Indies, from whence it has been brought into ſome of the curious gardens of Europe, where it muſt be preſerved in a good green-houſe, and the pots plunged into a tub of water, otherwiſe it will not thrive in this country. The leaves decay every winter, and are puſhed out from the roots every ſpring, like the Maranta; ſo may be propagated by parting of the roots when the leaves decay.

ALSINE [*Gr.* Ἀλσίνη], Chick-weed.

Theſe plants are ſo well known to moſt perſons, it will be needleſs to mention them in this place, unleſs it be to caution perſons from permitting them to grow either in their gardens, or on dunghills, where they will ſoon ſhed their ſeeds, and become troubleſome weeds;

weeds; but as they are annual, they may with little trouble be deſtroyed, if they do not ſtand to produce ſeed.

ALTHÆA [Ἀλθαία, ſo called from ἀλθαίνω, *Gr.* to heal], Marſhmallow.

The CHARACTERS are,

The flower hath a double empalement; the outer is of one leaf, and is unequally divided into nine narrow ſegments at the brim; the inner one is alſo of one leaf, cut into five broad acute ſegments at the top; theſe are both permanent. The flower hath five petals which coaleſce at their baſe, but ſpread open above and are ſhaped like a heart. There are many ſtamina joined below, and form a kind of cylinder, but are looſe above, and inſerted in the column. In the center is placed the orbicular germen, ſupporting a ſhort cylindrical ſtyle, crowned with numerous ſtigma, which are of equal length with the ſtamina. The empalement afterward becomes an orbicular depreſſed capſule, divided into ſeveral cells, each containing one compreſſed kidney-ſhaped ſeed.

This genus of plants is ranged by Dr. Linnæus in the third ſection of his ſixteenth claſs, which is titled Monodelphia Polyandria, the ſtamina being joined together to form a ſort of column.

The SPECIES are,

1. ALTHÆA foliis ſimplicibus acuminatis acutè dentatis tomentoſis. *Marſhmallow with ſingle woolly leaves, which are indented in ſharp ſegments.* Althæa Dioſcoridis & Plinii. C. B. P. 315. *Common Marſhmallow.*
2. ALTHÆA (*Officinalis*) foliis ſimplicibus angulato-rotundioribus tomentoſis. *Marſhmallow with angular, woolly, round-pointed leaves.* Althæa folio rotundiori aut minùs acuminato. Sutherl. Edinb.
3. ALTHÆA (*Hirſuta*) foliis trifidis piloſo-hiſpidis ſupra glabris. Hort. Cliff. 349. *Marſhmallow with trifid, hairy, pungent leaves.* Alcea villoſa. Dalechamp. Hiſt. 594.
4. ALTHÆA (*Cannabina*) foliis inferioribus palmatis ſuperioribus digitatis. Hort. Cliff. 205. *Marſhmallow with the under leaves ſhaped like a hand, and the upper leaves more divided.* Alcea fruticoſo cannabino folio. Cluſ. Hiſt. p. 2. pag. 25.

The firſt ſort is the common Marſhmallow, which grows naturally in moiſt places in divers parts of England, and is frequently uſed in medicine. It hath a perennial root and an annual ſtalk. The plant grows erect, to the height of four or five feet, and puts out a few lateral branches on the ſide of the ſtalks, garniſhed with leaves which are hoary and ſoft to the touch; they are angular, and placed alternately on the branches; the flowers come out from the wings of the leaves, which are ſhaped like thoſe of the Mallow, but are ſmaller and of a pale colour. Theſe appear in June or July, and the ſeeds ripen in September. It may be propagated faſt enough, either by ſeeds or parting their roots. When it is propagated by ſeeds they ſhould be ſown in the ſpring, but if by parting their roots, the beſt time is in autumn, when the ſtalks decay. It will thrive in any ſoil or ſituation, but in moiſt places will grow larger than in dry land. The plants ſhould not be nearer together than two feet, for their roots ſpread wide on every ſide.

The ſecond ſort is ſomewhat like the firſt, but the leaves are not ſo long, nor do they end in a ſharp point, but are angular, and rounder than thoſe of the firſt. I have cultivated this in the Chelſea garden many years, and find it retains its difference.

The third ſort grows naturally in Spain and Portugal; from both theſe countries I have received the ſeeds. This is a low plant, whoſe branches trail on the ground, unleſs they are ſupported by ſtakes. The leaves and ſtalks are beſet with ſtrong hairs; the flowers come out at the wings of the ſtalks, and are ſmaller than thoſe of the common ſort, having purpliſh bottoms. The leaves are deeply cut into three parts, and have long foot-ſtalks; the ſtalks are woody, but ſeldom laſt more than two years.

If the ſeeds of this ſort are ſown in April, the plants will flower in July, and the ſeeds ripen in September. They ſhould be ſown in the places where they are to remain, for as the roots ſhoot deep into the ground, unleſs the plants are removed very young, they ſeldom ſurvive tranſplanting.

The fourth ſort has a woody ſtem, which riſes to the height of four or five feet, and puts out many ſide branches. Theſe are garniſhed with leaves of different ſhapes; thoſe which are on the lower part of the ſtalks are like a hand, very ſlightly cut toward their outſide, but thoſe which are placed on the upper part of the branches, are deeply cut into ſeveral parts; theſe are hairy, and grow alternately on the branches; the flowers come out from the wings of the ſtalks in the ſame manner as the other ſorts, but are not ſo large as thoſe of the common Marſhmallow; they are of a deeper red colour, and the empalement is much larger. This ſort ſeldom flowers the firſt year, unleſs the ſummer proves warm; but when the plants live through the winter, they will flower early the following ſummer, and produce good ſeeds. This grows naturally in Hungary and Iſtria, from both which places I have received the ſeeds.

It is propagated by ſeeds, which ſhould be ſown in the ſpring in the place where the plants are to remain; or if otherwiſe, the plants muſt be tranſplanted young, elſe they will not ſucceed. They ſhould have a ſheltered ſituation and a dry ſoil, otherwiſe they will not live through the winter in England. When theſe plants grow in a ſtony ſoil, or in lime rubbiſh, they will be ſtinted in their growth, but they will have leſs ſap in their branches, ſo will better endure the cold of this climate. This ſort ſeldom continues longer than two years in England, but as the ſeeds ripen here, the plants may be had in plenty.

ALTHÆA FRUTEX. See HIBISCUS and LAVATERA.

ALYSSOIDES. See ALYSSUM and LUNARIA.

ALYSSON ALPINUM LUTEUM. See DRABA.

ALYSSON SEGETUM. See MYAGRUM.

ALYSSON SERPILLI FOLIO. See CLYPEOLA.

ALYSSON VERONICÆ FOLIO. See DRABA.

ALYSSON VULGARE. See DRABA.

ALYSSUM, [Ἄλυσσον, of ἀλύσσω, *Gr.* to be mad; ſo called, becauſe it was believed to have the virtue of curing madneſs.] Madwort.

The CHARACTERS are,

The flower hath an oblong four-leaved empalement, which falls away. It hath four petals in form of a croſs, which ſpread open above the empalement. It hath ſix ſtamina, two of which are ſhorter than the other four, crowned with broad ſummits; in the center of the flower is ſituated the oval germen, ſupporting a ſingle ſtyle, crowned with an obtuſe ſtigma. After the flower is paſt, the germen becomes a globular or compreſſed ſeed-veſſel, in which are lodged ſeveral compreſſed ſeeds.

This genus is ranged in the fifteenth claſs of Linnæus, entitled Tetradynamia-Siliculoſa; the flowers of this claſs have ſix ſtamina, four of which are longer than the other two, and the ſeed-veſſels are ſhort, in ſome globular, and in others they are compreſſed.

The SPECIES are,

1. ALYSSUM (*Saxatile*) caulibus fruteſcentibus paniculatis foliis lanceolatis molliſſimis undulatis integris. Prod. Leyd. 331. *Madwort with ſhrubby ſtalks, flowers growing in panicles, and whole, ſoft, ſpear-ſhaped waved leaves.* Alyſſon Creticum ſaxatile foliis undulatis incanis. Tourn. Cor. 15.
2. ALYSSUM (*Halimifolium*) foliis lanceolato-linearibus acutis integerrimis caulibus procumbentibus perennantibus. Hort. Cliff. 333. *Madwort with whole, ſpear-ſhaped, pointed leaves, and trailing perennial ſtalks.* Alyſſon halimi folio ſempervirens. Tourn. Inſt.
3. ALYSSUM (*Spinoſum*) ramis floreis ſenilibus ſpiniformibus nudis. Hort. Cliff. 332. *Madwort, whoſe older branches have naked ſpines.* Thlaſpi fruticoſum ſpinoſum. C. B. P. 108.
4. ALYSSUM (*Montanum*) ramulis ſuffruticoſis diffuſis foliis punctato-echinatis. Hort. Upſal. 185. *Madwort with ſhrubby diffuſed branches and leaves, having prickly punctures.* Thlaſpi montanum luteum. J. B. 2. p. 928.

5. ALYSSUM

A L Y

5. Alyssum (*Incanum*) caule erecto foliis lanceolatis incanis integerrimis floribus corymbosis. Hort. Cliff. 332. *Madwort with an erect ſtalk, hoary ſpear-ſhaped leaves which are entire, and flowers collected into round heads.* Alyſſon fruticoſum incanum. Tourn. Inſt. R. H.
6. Alyssum (*Clypeatum*) caule erecto herbaceo ſiliculis ſeſſilibus ovalibus compreſſo-planis petalis acuminatis. Lin. Sp. Plant. 651. *Madwort with an erect herbaceous ſtalk, pods growing cloſe to the ſtalks, which are oval and compreſſed, and the flower leaves pointed.* Lunaria leucoii folio ſiliquâ oblongâ majori. Tourn. Inſt. 218.
7. Alyssum (*Sinuatum*) caule herbaceo foliis lanceolatis dentatis ſiliculis inflatis. Lin. Sp. Plant. 651. *Madwort with an herbaceous ſtalk, ſpear-ſhaped indented leaves, and ſwollen ſeed-veſſels.* Alyſſoides incanum foliis ſinuatis. Tourn. Inſt. 213.
8. Alyssum (*Creticum*) caule herbaceo erecto foliis incanis lanceolatis integerrimis ſiliculis inflatis. Lin. Sp. Plant. 651. *Madwort with an erect herbaceous ſtalk, hoary, ſpear-ſhaped, entire leaves, and a ſwelling ſeed-veſſel.* Alyſſoides fruticoſum Creticum leucoii folio incano. Tourn. Cor. 15.
9. Alyssum (*Veſicaria*) foliis linearibus dentatis, ſiliculis inflatis angulatis acutis. Lin. Sp. 910. *Madwort with linear indented leaves and ſwollen pods, which are angular and acute pointed.* Veſicaria Orientalis, foliis dentatis. Tourn. Cor. 49.
10. Alyssum (*Deltoideum*) caulibus ſuffruteſcentibus proſtratis, foliis lanceolato-deltoidibus, ſiliculis hirtis. Lin. Sp. 908. *Madwort with trailing ſhrubby ſtalks, deltoide ſpear-ſhaped leaves, and hairy pods.* Alyſſon Creticum foliis angulatis, flore violaceo. Tourn. Cor. 15.
11. Alyssum (*Calycinum*) caulibus herbaceus, ſtaminibus omnibus dentatis, calycibus perſiſtentibus. Jacq. Vind. 114. *Madwort with herbaceous ſtalks, all the ſtamina indented, and a permanent flower-cup.* Thlaſpi Alyſſon dictum campeſtre majus. C. B. P. 107.
12. Alyssum (*Campeſtre*) caule herbaceo, ſtaminibus ſtipatis pari ſetarum, calycibus deciduis. Lin. Sp. 909. *Madwort with an herbaceous ſtalk, and the flower-cup deciduous.* Alyſſon incanum, ſerpylli folio, fructu nudo. Tourn. Inſt. 217.

The firſt ſort is a low perennial plant, with a fleſhy ſtalk, which ſeldom riſes more than one foot high, but divides into many leſs branches which grow near the ground, ſo that a ſingle plant will ſpread to a conſiderable diſtance. The branches are garniſhed with long ſpear-ſhaped leaves, which are hoary and waved on their edges, placed on without any order. The flowers are produced in looſe panicles, at the extremity of every branch, and are of a bright yellow colour, conſiſting of four petals, placed in form of a croſs: theſe being numerous, make a fine appearance during their continuance. They appear the latter end of April, or the beginning of May, and if the ſeaſon is moderate, will continue three weeks in beauty. The ſeeds ripen in July, but it is only from young plants that ſeeds can be expected; for the old plants, or thoſe which are raiſed from ſlips or cuttings, rarely produce ſeeds in England.

This plant is hardy, and although brought from a more ſoutherly climate, yet, if planted in a dry, lean, or rubbiſhy ſoil, will endure our ſevereſt winters abroad. It is increaſed by ſowing the ſeeds in March in a light ſandy ſoil, or by planting cuttings in April or May; which are very apt to take root, if kept ſhaded in the heat of the day, and gently refreſhed with water.

The ſecond ſort ſeldom continues above two or three years with us, and muſt therefore be often ſown to preſerve it; or if the ſeeds are ſuffered to fall, and remain upon the ground, the plants will riſe without any trouble. This plant ſpreads itſelf upon the ground, and never riſes to any height. It produces, at the extremity of its branches, very pretty tufts of ſmall white flowers; of which the plant is ſeldom deſtitute for ſix or ſeven months ſucceſſively, for which reaſon it deſerves a place in the gardens of the curious. This will grow from ſeeds, and alſo from cuttings, if planted and managed as the former.

The third ſort hath ligneous branches which riſe about two feet high; theſe are armed with ſmall ſpines; the leaves are hoary, ſpear-ſhaped, and thinly placed on the ſtalks without any order. The flowers are white, croſs-ſhaped, and grow in ſmall cluſters at the extremity of the branches. After the flowers are paſt, the germen turns to an oblong ſeed-veſſel, containing ſeveral round ſeeds.

This may be propagated in the ſame manner as the firſt ſort, either by ſeeds or ſlips; and when the plants grow in rubbiſh, or on old walls, they will laſt much longer, and endure the cold of our winters better than thoſe which are in a good ſoil. It grows naturally in Spain, Italy, and the ſouth of France.

The fourth ſort hath trailing branches, which lie on the ground; theſe are garniſhed with oblong hoary leaves, which are rough to the touch, and are placed alternately on every ſide of the branches; the flowers are produced in ſmall cluſters at the extremity of the branches, which are of a dark yellow colour, and are ſucceeded by ſeed-veſſels ſhaped like thoſe of the third ſort. This grows naturally upon rocks and ruins, in Burgundy, and ſome other parts of France, as alſo about Baſil. It may be propagated in the ſame manner as the former ſorts, and when it grows in rubbiſh, the plants will continue ſome years; but in rich ground, they ſeldom live through the winter in England.

The fifth ſort grows to the height of two feet, having ligneous ſtalks, which divide into ſeveral branches toward the top. Theſe are garniſhed with hoary ſpear-ſhaped leaves, which are placed alternately on the branches: at the extremity of every ſhoot, the flowers are produced in round bunches, which are ſmall, white, and croſs-ſhaped; theſe are ſucceeded by oval ſeed-veſſels, which are full of brown ſeeds. It grows naturally in the ſouth of France, Spain, and Italy, chiefly on rocky or gravelly ſoils. When this is ſown in a rich ſoil, it ſeldom ſurvives the winter; but in lime rubbiſh, or upon old walls, it will continue ſeveral years. It flowers in June, July, Auguſt, and September, and the ſeeds ripen ſoon after; which if permitted to ſcatter, the plants will come up, and require little care.

The ſixth ſort is a biennial plant with an herbaceous ſtalk, which is garniſhed with oblong hoary leaves, placed alternately; the flowers come out from the wings of the ſtalks ſingle, and are ſucceeded by oval compreſſed ſeed-veſſels, ſhaped like thoſe of the Lunaria, which contain many flat ſeeds. It grows naturally in Spain and Portugal, from whence I have received the ſeeds. It is propagated by ſeeds, which muſt be ſown upon dry ground, or lime rubbiſh; for in rich land the plants will grow too vigorous in ſummer, ſo that in autumn they generally rot off and decay.

The ſeventh ſort is a low ſpreading plant, which divides into ſmall branches; theſe ſpread near the ground, and are garniſhed with oblong hoary leaves which continue through the year: the flowers are produced in ſmall cluſters at the extremity of the branches; they are of a bright yellow colour, conſiſting of four petals placed in form of a croſs. After the flower is paſt, the germen becomes an oval ſwelling ſeed-veſſel, which is filled with roundiſh ſeeds. This grows naturally in the iſlands of the Archipelago, but is hardy enough to live in the open air in England, in a dry ſoil, and a warm ſituation. It is propagated by ſeeds, and ſeldom laſts longer than two or three years.

The eighth ſort grows more erect, having an herbaceous ſtalk, which ſends out a few lateral branches toward the top, garniſhed with oblong hoary leaves. The flowers grow in ſmall cluſters at the extremity of the branches, which are ſucceeded by oval ſwelling ſeed-veſſels like the former. This ſeldom continues longer than two years in England; it muſt have a warm dry ſituation, otherwiſe it will not live in the open air, and is propagated by ſeeds, which ſhould

be ſown in Auguſt, ſoon after they are ripe; and if a few of them are potted in October, and ſheltered under a frame in winter, they will flower the following June, ſo good ſeeds may be obtained the ſame year; for thoſe plants which ariſe early in the year, grow luxuriantly in ſummer, ſo do not often live through the winter, or ripen ſeeds.

The ninth and tenth ſorts have trailing ſtalks, which ſpread on the ſurface of the ground; the plants produce their flowers toward the extremity of the ſtalks in looſe ſpikes, which are formed like thoſe of the other ſorts, having four petals in each in form of a croſs; thoſe of the ninth ſort are ſucceeded by ſwollen ſeed-veſſels, but the tenth, which flowers early in the ſpring, are rarely ſucceeded by ſeed-veſſels in this country. This is an abiding plant, which may be propagated from its trailing branches, which, if planted in April, will take root and become good plants by the following autumn, when two or three plants may be placed in a common frame for ſhelter in winter, to preſerve the ſpecies; for in hard winters, thoſe which are expoſed are ſometimes deſtroyed.

The eleventh and twelfth are both annual plants, ſo are propagated by ſeeds, which ſhould be ſown in a border of light earth in April, in ſuch places where the plants are to remain; if theſe are thinned and kept clean from weeds, they will flower in July, and perfect their ſeeds in autumn.

AMARANTHOIDES. See GOMPHRENA.

AMARANTHUS [Ἀμάραντος; of α privative, and μαραίνω, *Gr.* to wither; ſo called, becauſe the flower of this plant being cropped, does not ſoon wither; but being dried, keeps the beauty of its colour a great while,] Flower-gentle.

The CHARACTERS are,

It hath male and female flowers in the ſame plant. The flower hath no petals, but the empalement conſiſts of three or five pointed ſpear-ſhaped leaves which are coloured and permanent; this is common to both ſexes. The male flowers have in ſome ſpecies three, and in others five ſlender ſtamina, which are of the ſame length with the empalement, crowned with oblong ſummits. The female flowers have an oval germen, ſupporting three ſhort awl-ſhaped ſtyles, which are crowned with ſimple ſtigma. The empalement afterward becomes an oval coloured ſeed-veſſel having one cell, in which is lodged a ſingle globular ſeed.

This genus of plants is by Dr. Linnæus ranged in the fifth diviſion of his twenty-firſt claſs, entitled Monœcia Pentandria, from their having male and female flowers on the ſame plant, and the male flowers having five ſtamina.

The SPECIES are,

1. AMARANTHUS (*Tricolor*) glomerulis triandris axillaribus ſubrotundis amplexicaulibus foliis lanceolato-ovatis. Lin. Sp. Plant. 1403. *Flower-gentle with roundiſh heads, placed at the wings of the ſtalks embracing them, whoſe flowers have three ſtamina, and the leaves are oval and ſpear-ſhaped.* Amaranthus tricolor. Lob. Icon. 252. i. e. *Three coloured Amaranthus.*
2. AMARANTHUS (*Melancholicus*) glomerulis triandris axillaribus ſubrotundis ſeſſilibus foliis lanceolatis acuminatis. Lin. Sp. Plant. 1403. *Flower-gentle with three ſtamina, roundiſh heads growing cloſe to the ſtalk, and acute-pointed ſpear-ſhaped leaves.* Amaranthus colore obſcuriori ſive mas. Tourn. Inſt. 236. Amaranthus bicolor.
3. AMARANTHUS (*Triſtis*) glomerulis triandris rotundatis ſubſpicatis, foliis ovato-cordatis emarginatis petiolo brevioribus. Lin. Sp. 1404. *Flower-gentle with three ſtamina, roundiſh heads growing from the wings of the ſtalks in ſpikes, and oval heart-ſhaped leaves with ſhort foot-ſtalks.*
4. AMARANTHUS (*Caudatus*) racemis pentandris decompoſitis cylindricis pendulus longiſſimis. Hort. Cliff. 443. *Flower-gentle with five ſtamina, and very long, hanging, cylindrical ſpikes.* Amaranthus maximus paniculâ longâ pendulâ ſemine rubello. Raii Hiſt.
5. AMARANTHUS (*Maximus*) racemis ſubcylindricis pendulis, caule erecto arboreo. *Flower-gentle with hanging almoſt cylindrical ſpikes, and an erect tree-like ſtalk.* Amaranthus maximus. C. B. P. 120. *Commonly called Tree-like Amaranthus.*
6. AMARANTHUS (*Lividus*) glomerulis triandris ſubſpicatis rotundatis, foliis rotundo-ovatis retuſis. Lin. Sp. 1404. *Flower-gentle with roundiſh ſpikes of flowers having three ſtamina, and roundiſh, oval, blunt leaves.* Blitum pulchrum rectum magnum rubrum. J. B. 2. p. 966.
7. AMARANTHUS (*Flavus*) racemis pentandris compoſitis, ſummo infimiſque nutantibus, foliis ovatis mucronatis. Lin. Sp. 1406. *Flower-gentle with a compound ſpike of flowers having five ſtamina, and oval pointed leaves.*
8. AMARANTHUS (*Blitum*) glomeratis lateralibus trifidis foliis ovatis retuſis, caule diffuſo. Lin. Sp. Plant. 990. *Flower-gentle with roundiſh heads at the joints of the ſtalks, oval blunt leaves, and diffuſed ſtalks.* Blitum album minus. C. B. P. 118. *The ſmaller white Blite.*
9. AMARANTHUS (*Græcizans*) glomerulis triandris axillaribus foliis lanceolatis obtuſis. Lin. Sp. Plant. 1405. *Flower-gentle with flowers having three ſtamina, which grow in cluſters from the wings of the ſtalks, and blunt ſpear-ſhaped leaves.* Amaranthus floribus lateralibus congeſtis foliis lanceolatis obtuſis. Flor. Virg. 116. *Commonly called Pellitory-leaved Blite.*
10. AMARANTHUS (*Hybridus*) racemis pentandris decompoſitis congeſtis nudis, ſpiculis conjugatis. Flor. Virg. 148. *Flower-gentle with five ſtamina, decompounded ſpikes having double ſpiculæ.* Amaranthus ſylveſtris maximus Novæ Angliæ ſpicis viridibus. Raii Hiſt. 201. *Or Wild New England Blite with green ſpikes.*
11. AMARANTHUS (*Hypocondriacus*) racemis pentandris compoſitis confertis erectis, foliis ovatis mucronatis. Hort. Cliff. 444. *Flower-gentle with five ſtamina, erect cluſtered ſpikes, and oval-pointed leaves.* This is the Amaranthus ſylveſtris maximus Novæ Angliæ ſpicis purpureis. Tourn. Inſt. R. H. 235. *Commonly called Purple Flower-gentle.*
12. AMARANTHUS (*Spinoſus*) racemis pentandris cylindricis erectis axillis ſpinoſis. Hort. Cliff. 444. *Flower-gentle with five ſtamina, upright cylindrical ſpikes, and ſpines at the joints of the ſtalks.* Amaranthus Indicus ſpinoſus ſpicâ herbaceâ. H. L. 31.
13. AMARANTHUS (*Sanguineus*) racemis pentandris compoſitis erectis, lateralibus patentiſſimis, foliis ovato-oblongis. Lin. Sp. 1407. *Flower-gentle with compound ſpikes, whoſe lateral ſpikes ſpread out, the upper are erect, and oblong oval leaves.* Amaranthus racemis cylindricis lateralibus terminalibuſque cruciatim poſitis. Fig. Plant. 22.
14. AMARANTHUS (*Retroflexus*) racemis pentandris lateralibus terminalibuſque caule flexuoſo villoſo ramis retrocurvatis. Lin. Sp. Plant. 991. *Flower-gentle with five ſtamina, ſpikes proceeding from the wings of the ſtalks, and alſo at their extremities, and flexible, hairy, recurved branches.*
15. AMARANTHUS (*Oleraceous*) glomeribus triandris pentandriſque, foliis ovatis obtuſiſſimis emarginatis rugoſis. Lin. Sp. 1403. *Flower-gentle whoſe globes have flowers with three and five ſtamina, and rough, obtuſe, indented leaves.* Blitum album majus. C. B. P. 118.
16. AMARANTHUS (*Viridis*) glomerulis triandris, floribus maſculis trifidis, foliis ovatis emarginatis, caule erecto. Lin. Sp. 1405. *Flower-gentle with globular heads whoſe flowers have three ſtamina; the male are trifid, oval, indented leaves, and an upright ſtalk.*
17. AMARANTHUS (*Cruentus*) racemis pentandris decompoſitis remotis patulo nutantibus, foliis lanceolato-ovatis. Lin. Sp. Pl. 1406. *Flower-gentle with decompounded ſpikes of flowers with five ſtamina, the outer ſpreading aſunder, and oval ſpear-ſhaped leaves.* Amaranthus ſinenſis foliis variis, panicula ſpecioſa patula. Cent. tab. 6.

The firſt ſort has been long cultivated in gardens for the beauty of its variegated leaves, which are of three colours, viz. green, yellow, and red; theſe are very elegantly mixed: and when the plants are in full vigour, the leaves are large, and cloſely ſet from the bottom to the top of the ſtalks, and the branches form a ſort of pyramid; ſo that there is not a more

beautiful plant than this, when it is in full luſtre. From the leaves of this plant being partly coloured like the feathers of parrots, ſome botaniſts have ſeparated this ſpecies from the others, and conſtituted a genus of it by the title of Pſittacus.

The ſecond ſort hath been introduced into the Engliſh gardens much later than the former. This grows to the ſame height, and in the manner of its growth greatly reſembles it; but the leaves have only two colours, which are an obſcure purple, and a bright crimſon; theſe are ſo blended as to ſet off each other, and when the plants are vigorous, they make a fine appearance.

The third ſort hath no great beauty; it grows about three feet high with an upright ſtalk, which ſends out ſome lateral branches toward the top; theſe are garniſhed with oval heart-ſhaped leaves. The flowers are produced at the wings of the ſtalks in roundiſh ſpikes, as alſo at the extremity of the branches, but have very little beauty, ſo do not deſerve a place in the flower-garden. The young plants of this ſort are gathered to boil inſtead of Spinach by the inhabitants of India, where it grows naturally, and from thence I received the ſeeds of it as an eſculent plant.

The fourth ſort grows naturally in America. This hath an upright ſtem, three feet high; the leaves and ſtalks are of a pale green colour; the ſpikes of flowers are produced from the wings of the ſtalks, and alſo in cluſters at the extremity of the branches: they are very long and hang downward, being of a bright purple colour. I have meaſured ſome of theſe ſpikes, which were two feet and a half long, ſo that many of them have reached the ground.

The fifth ſort hath a ſtrong ſtem, which riſes to the height of ſeven or eight feet, ſending forth many horizontal branches toward the top, garniſhed with oblong, rough, green leaves. At the extremity of every ſhoot, the cylindrical ſpikes of a purple colour are produced, which hang downward; but theſe are ſeldom half the length of thoſe of the former ſort, and are much thicker. This is the ſort of Amaranth, which is directed by the college to be uſed in medicine.

The ſixth ſort grows near three feet high, putting out ſeveral ſide branches, which are garniſhed with oval blunt leaves; at the ends of the branches the ſpikes are produced in cluſters and grow erect, theſe are of a deep purple colour.

The ſeventh ſort grows near four feet high; the ſtalks are inclined to red; the leaves are of an oval ſpear-ſhaped figure, green colour, marked with purple ſpots, and have very long foot-ſtalks. The ſpikes come out at the extremity of the branches in cluſters, as alſo from the wings of the ſtalks; theſe are of a pale green colour, and grow erect. I have received the ſeeds of this ſort from Portugal, by the title of Bredos, recommending it to be cultivated as a culinary herb.

The eighth ſort grows naturally in moſt of the warm parts of Europe, and alſo in America; for wherever it is permitted to ſcatter its ſeeds, the plants will come up the following ſummer, and become troubleſome weeds, as will alſo the ninth ſort; ſo theſe are ſeldom cultivated, as they are only preſerved in botanic gardens for the ſake of variety. The ſtalks of both theſe ſorts ſpread on the ground.

The tenth ſort grows upward of three feet high, and ſends out many ſide branches, which are hairy, and garniſhed with oblong rough leaves. The ſpikes are produced from the wings of the ſtalks, as alſo at the extremity of the branches, growing horizontally, and are of a green colour. There is little beauty in this plant, therefore is ſeldom admitted to gardens, unleſs for the ſake of variety.

The eleventh ſort has been long in England, and was formerly propagated in flower-gardens, but is now become a common weed, frequently growing upon dunghills: for as the plants abound with ſeeds, ſo where they are permitted to ſcatter, there will be plenty of the plants come up the following ſummer. And theſe ſeeds will remain in the ground ſeveral years, and as often as they are turned up to the ſurface, they will produce plants; ſo that when plants are ſuffered to ſtand till their ſeeds fall, there will be every ſummer freſh crops of the plants for ſeveral years.

The twelfth ſort grows about two feet high, putting out many ſide branches, ſo as to form a buſhy plant; the leaves are oblong, and the ſpikes come out at every joint, where the ſtalks are armed with ſharp prickles, and at the extremity of the branches, the ſpikes are longer than thoſe of the ſide: theſe are ſlender, and are inclining to a brown colour, ſo make no great figure, therefore is rarely allowed to have a place, except in botanic gardens.

The ſeeds of the thirteenth ſort were ſent me from the Bahama Iſlands, as an eſculent plant, bearing fine flowers. This grows three feet high, with purple ſtalks and leaves; the ſpikes are ſhort and cylindrical; theſe are frequently produced from the wings of the ſtalks, but at the extremity of the ſtalk ariſes a large cluſter of ſpikes which are placed croſſwiſe, with one upright ſtalk in the middle. Theſe are of a bright purple colour at firſt, but afterward fade to a darker colour, as the ſeeds ripen.

The fourteenth ſort is a native of North America, from whence the ſeeds were ſent to Europe, but is now become a common weed in many gardens near London, ſo is ſeldom allowed a place, except in botanic gardens.

The fifteenth ſort has no beauty, therefore not worthy of a place in gardens: this and the ſixteenth ſort are eſteemed in ſome parts of India as eſculent herbs; the inhabitants of thoſe warm countries, gather the herbs while young, and dreſs them inſtead of Spinach, but being much inferior to it, they are ſeldom uſed in thoſe countries where Spinach will thrive. Theſe plants grow from two to three feet high, and when they have room, will ſend out many ſide branches; but if their ſeeds are permitted to ſcatter, there will be a plentiful ſupply of plants the following ſummer.

The ſeeds of the ſeventeenth ſort were brought from China, and the two firſt years they were ſown in England, produced beautiful heads of flowers, which made a gay appearance; but afterward the ſeeds degenerated, and the plants which were produced from them had little beauty; which is the caſe with ſome others of this genus, ſo ſhould not be eſteemed as diſtinct ſpecies.

The ſorts which are worthy of a place in the pleaſure-garden, are particularly the firſt and ſecond: theſe are tender, and require ſome art and care to bring them to perfection in England, therefore their management will be hereafter more particularly inſerted.

Next to theſe are the fourth, fifth, and thirteenth ſorts. The ſeeds of theſe ſhould be ſown upon a moderate hot-bed toward the end of March, and when the plants come up, they ſhould have a large ſhare of air admitted to them in mild weather, to prevent their drawing up weak. When they are large enough to tranſplant, there ſhould be another moderate hot-bed provided, to which they ſhould be removed, placing them at ſix inches diſtance every way, obſerving to water them, as alſo to ſhade them from the ſun until they have taken new root; after which the air ſhould be freely admitted to them, at all times when the weather is favourable; their waterings ſhould be frequent, but not given in great quantities. As the plants advance, and the warmth of the ſeaſon increaſes, they ſhould have a greater ſhare of air, that by degrees they may be hardened to bear the open air. The beginning of June they may be taken up with large balls of earth to their roots, and planted ſome into pots, and others into the borders of the pleaſure-garden, obſerving to ſhade them until they have taken good root; after which they muſt be frequently watered in dry weather, eſpecially thoſe in the pots, which will require watering every evening in

in warm dry weather. The fifth ſort will not thrive in pots, ſo ſhould be planted in a rich light ſoil, where, if it is allowed room, and plentifully watered in dry weather, the plants will grow to a very large ſize, and make a fine appearance.

The twelfth ſort is alſo tender, ſo whoever is inclinable to cultivate that plant, ſhould treat it in the ſame manner as is directed for the former.

The other ſorts are hardy enough to grow in the open air, ſo may be ſown on a bed of light earth in the ſpring, and when the plants are fit to remove, they may be tranſplanted into any part of the garden, where they will thrive, and produce plenty of ſeeds, which, if permitted to ſcatter, will ſtock the garden with plants.

The two firſt ſorts muſt be ſown on a good hot-bed in February, or the beginning of March at fartheſt; and in about a fortnight's time, if the bed is in good temper, the plants will riſe; ſoon after which you muſt prepare another hot-bed, covered with good, rich, light earth, about four inches thick; then raiſe up the young plants with your finger, ſo as not to break off the tender roots, and prick them into your new hot-bed about four inches diſtance every way, giving them a gentle watering to ſettle the earth to their roots; but in doing this, be very cautious not to bear the young plants down to the ground by haſty watering, which rarely riſe again, or at leaſt ſo as to recover their former ſtrength in a long time, but very often rot in the ſtems, and die quite away.

In the middle of the day keep them ſcreened with mats from the heat of the ſun, and give them air by raiſing up the glaſſes; and if the glaſſes are wet, it will be proper to turn them every day, in good weather, that they may dry; for the moiſture which is occaſioned by the fermentation of the dung, and the perſpiration of the plants, is of a noxious quality, and very unkindly to plants; ſo that if the weather happens to prove bad, that you cannot turn your glaſſes, it will be of great ſervice to the plants to wipe off all moiſture two or three times a day with a woollen cloth to prevent its dropping upon the plants. When the plants are firmly rooted, and begin to grow, you muſt obſerve to give them air every day, more or leſs, as the weather is cold or hot, to prevent their drawing up too faſt, which greatly weakens their ſtems.

In about three weeks or a month's time, theſe plants will have grown ſo as to meet, and will ſtand in need of another hot-bed, which ſhould be of a moderate temper, and covered with the ſame rich earth about ſix inches thick, in which they ſhould be removed, obſerving to take them up with as much earth about their roots as poſſible, and plant them ſix or ſeven inches diſtance every way, giving them ſome water to ſettle the earth about their roots; but be very careful not to water them heavily, ſo as to bear down the plants, as was before directed; and keep them ſhaded in the heat of the day, until they have taken freſh roots; and be ſure to refreſh them often gently with water, and give them air in proportion to the heat of the weather, covering the glaſſes with mats every night, leſt the cold chill your beds, and ſtop the growth of the plants.

The middle of May you muſt provide another hot-bed, which ſhould be covered with a deep frame, that the plants may have room to grow. Upon this hot-bed you muſt ſet as many three-penny pots as can ſtand within the compaſs of the frame; theſe pots muſt be filled with good rich earth, and the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the frame with noxious ſteams: when the bed is in good order to receive the plants, they ſhould be carefully taken up with a trowel, or ſome ſuch inſtrument, obſerving to preſerve as much earth to their roots as poſſible; then place each ſingle plant in the middle of one of the pots, filling the pot up with the earth before deſcribed, and ſettle it cloſe to the root of the plant with your hands; water them gently, as before, and ſhade them in the heat of the day from the violence of the ſun, by covering the glaſſes with mats.

In about three weeks more theſe plants will have grown to a conſiderable ſize and ſtrength, ſo that you muſt now raiſe the glaſſes very much in the day-time; and when the air is ſoft, and the ſun is clouded, draw off the glaſſes, and expoſe them to the open air; and repeat this as often as the weather will permit, which will harden them by degrees to be removed abroad into the places where they are to remain the whole ſeaſon; but it is not adviſeable to ſet theſe plants in the open air till after the firſt week in July, obſerving to do it when the air is perfectly ſoft, and, if poſſible, in a gentle ſhower of rain.

Let them at firſt be ſet in ſhelter for two or three days, where they may be ſcreened from the violence of the ſun, and ſtrong winds, to which they muſt be inured by degrees. Theſe plants, when grown to a good ſtature, perſpire very freely, and muſt be every day refreſhed with water, if the weather proves hot and dry; otherwiſe they will ſtint, and never produce ſo large leaves, as thoſe which are ſkilfully treated.

This is the proper management, in order to have fine Amaranths, which, if rightly followed, and the kinds are good, in a favourable ſeaſon, will produce large fine leaves, and are the greateſt ornament to a good garden for upwards of two months in the latter part of ſummer.

Where perſons are curious in having theſe annual plants in great perfection, there ſhould be a glaſs-caſe erected with upright and ſloping glaſſes on every ſide, with a pit in the bottom for tan, in which the pots ſhould be plunged; if this is raiſed eight or nine feet to the ridge, and the upright glaſſes are five feet, there will be room and height enough to raiſe theſe and other annual plants to great perfection, and in ſuch a building, many of thoſe tender annual plants, which rarely perfect ſeeds in this climate without ſuch contrivance, may be every year brought ſo forward as to ripen their ſeeds.

AMARANTHUS CRISTATUS. See CELOSIA.

AMARYLLIS, Lily Daffodil.

The CHARACTERS are,

It hath an oblong compreſſed ſpatha, (or ſheath) which incloſes the flower-buds, and open ſide ways, becomes dry, and is permanent; the flower hath ſix ſpear-ſhaped petals. In the center is ſituated the roundiſh furrowed germen, ſupporting a ſlender ſtyle, crowned with a three-cornered ſtigma; this is attended by ſix awl-ſhaped ſtamina, which are crowned with incumbent ſummits. After the flower is paſt, the germen becomes an oval capſule, opening in three parts, having three cells, which contain round ſeeds.

This genus is ranged by Dr. Linnæus in the firſt ſection of his ſixth claſs of plants, entitled Hexandria Monogynia, from the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. AMARYLLIS (*Lutea*) ſpathâ uniflorâ, corollâ æquali, ſtaminibus declinatis. Lin. Sp. 420. *Lily Daffodil with a ſingle flower in each ſpatha, which is equal, and the ſtamina declined.* Lilio Narciſſus luteus autumnalis major. Tourn. Inſt. 386. *Commonly called autumnal Narciſſus.*
2. AMARYLLIS (*Atamaſco*) ſpathâ uniflorâ, corollâ æquali, piſtillo declinato. Hort. Cliff. 135. *Lily Daffodil with a ſingle flower in each ſheath, which has equal petals, and the pointal declining.* Lilio Narciſſus Indicus pumilus monanthos albus. Mor. Hiſt. 2. 266. *Commonly called Atamuſco Lily.*
3. AMARYLLIS (*Formoſiſſima*) ſpathâ uniflorâ, corollâ inæquali, petalis tribus genitalibuſque declinatis. Hort. Cliff. 135. *Lily Daffodil with one flower in each cover, which has unequal petals, and the ſtamina and ſtyle are declined.* Lilio Narciſſus Jacobæus flore ſanguineo nutante. Hort. Elth. 195. *Commonly called Jacobæa Lily.*
4. AMARYLLIS (*Sarnienſis*) ſpathâ multiflorâ, corollis revolutis genitalibus. Hort. Upſal. 75. *Lily Daffodil with*

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with many flowers in one cover; the petals equal, ſpread open, and turned backward, with broken ſtamina, commonly called Guernſey Lily.

5. Amaryllis (*Regina*) ſpathâ multiflorâ, corollis campanulatis æqualibus, genitalibus declinatis. Hort. Cliff. 135. *Lily Daffodil with many flowers in one cover, the petals equal and bell-ſhaped, and the ſtamina declined.* Lilio Narciſſus polyanthos flore incarnato, fundo ex luteo albeſcente. Sloan. Cat. Jam. 115. *commonly called Belladonna Lily.*

6. Amaryllis (*Belladonna*) ſpâtha multiflorâ corollis campanulatis marginibus reflexis genitalibus declinatis. *Lily Daffodil with many flowers in one cover, the petals equal and bell-ſhaped, their borders turning backward, and declining ſtamina.* Lilium Americanum puniceo flore, Belladonna dictum. Par. Bat. 194. *commonly called Mexican Lily.*

7. Amaryllis (*Longiſolia*) ſpathâ multiflorâ, corollis campanulatis æqualibus, ſcapo compreſſo longitudini umbellæ. Flor. Leyd. 36. *Lily Daffodil with many flowers in one cover, the petals equal, and the cover compreſſed the length of the umbel.* Lilium Africanum humile longiſſimis foliis polyanthos ſaturato colore purpuraſcens. Par. Bat. 195.

8. Amaryllis (*Zeylanica*) ſpathâ multiflorâ corollis campanulatis æqualibus, genitalibus declinatis ſcapo tereti ancipiti. Flor. Leyd. 36. *Lily Daffodil with many flowers in one cover, the petals equal, and the cover opening two ways.* Lilio Narciſſus Zeylanicus latifolius flore niveo externè lineâ purpureâ ſtriato. Hort. Amſt. 1. 73. *commonly called the Ceylon Lily.*

9. Amaryllis (*Ciliaris*) ſpathâ multiflorâ, foliis ciliatis. Flor. Leyd. 37. *Lily Daffodil with many flowers in one cover, and the edges of the leaves hairy.* Lilio Narciſſus ſphæricus Æthiopicus foliis guttatis & cilii inſtar piloſis. Pluk. Alm. 220. *commonly called the African Scarlet Lily.*

10. Amaryllis (*Vernalis*) ſpathâ uniflorâ, corollâ æquali, ſtaminibus erectis. *Lily Daffodil with one flower in a cover, with equal petals, and erect ſtamina.* Lilio Narciſſus luteus vernus. Tourn. Inſt. 386. *commonly called Spring yellow Lily Narciſſus.*

11. Amaryllis (*Orientalis*) ſpathâ multiflorâ corollis inæqualibus foliis linguiformibus. Buttn. *Lily Daffodil with many flowers in a cover, whoſe petals are unequal, and leaves ſhaped like a tongue.* Lilio Narciſſus Indicus maximus ſphæricus floribus plurimis rubris liliaceis. Mor. Hiſt. 2. 268. *Brunſwigia of Dr. Heiſter.*

12. Amaryllis (*Capenſis*) ſpathâ triflorâ corollis campanulatis æqualibus gentialibus declinatis. *Lily Daffodil with three flowers in each cover, whoſe petals are equal and bell-ſhaped, with declining ſtamina.*

The firſt ſort is very hardy, and increaſes very faſt by offsets. The ſeaſon for tranſplanting theſe roots is any time from May to the end of July, when their leaves are decayed, after which it will be too late to remove them; for they will begin to puſh out new fibres by the middle of Auguſt, or ſooner if the ſeaſon be moiſt, and many times they flower the beginning of September; ſo that if they are tranſplanted, it will ſpoil their flowering. This plant will grow in any ſoil or ſituation; but it will thrive beſt in a freſh, light, dry ſoil, and in an open ſituation; i. e. not under the dripping of trees, nor too near walls. It is commonly called by the gardeners, the Yellow Autumnal Narciſſus, &c. and is uſually ſold by them with Colchicums, for autumnal ornaments to gardens; for which purpoſe this is a pretty plant, as it will frequently keep flowering from the beginning of September to the middle of November, provided the froſt is not ſo ſevere as to deſtroy the flowers; for although there is but one flower in each cover, yet there is a ſucceſſion of flowers from the ſame root, eſpecially when they are ſuffered to remain three or four years unremoved. The flowers ſeldom riſe above three or four inches high; they are ſhaped ſomewhat like the flowers of the large yellow Crocus; the green leaves come up at the ſame time, like the Saffron, and after the flowers are paſt, the leaves increaſe all the winter. The roots are bulbous, and ſhaped like thoſe of the Narciſſus, ſo are proper ornaments for ſuch borders as are planted with Cyclamens, Saffron, Autumnal Crocus, Colchicums, and ſuch low autumnal flowers.

The tenth ſort is more rare in England than any of the other, at preſent. It was formerly in ſeveral curious gardens, but as it flowers at a ſeaſon when there are ſo many finer ſorts in beauty, it was neglected and caſt out of the gardens, whereby it is almoſt loſt in England: it grows naturally in Spain and Portugal, where it flowers early in January. This is as hardy as the firſt ſort, and may be planted in the open borders, and treated in the ſame manner, excepting that this will not loſe its leaves ſo ſoon, ſo ſhould not be taken out of the ground to tranſplant, till the end of July, or beginning of Auguſt. It flowers in April or the beginning of May, but is not of long duration.

The ſecond ſort is a native of Virginia and Carolina, in which countries it grows very plentifully in the fields and woods, where it makes a beautiful appearance when it is in flower. The flowers of this ſort are produced ſingle, and at their firſt appearance have a fine Carnation colour on their outſide; but fades away to a pale, or almoſt white, before the flowers decay. This plant is ſo hardy, as to thrive in the open air in England, provided the roots are planted in a warm ſituation, and on a dry ſoil; it may be propagated by offsets from the roots. The flowers of this ſort are almoſt as large as thoſe of the ſmall Orange Lily, but do not grow above ſix or eight inches high; they appear the latter end of May, or beginning of June, and ſometimes it flowers in Auguſt in this country.

The third ſort, which is commonly called Jacobæa Lily, is now become pretty common in the curious gardens in England, the roots ſending forth plenty of offsets, eſpecially when they are kept in a moderate warmth in winter: for the roots of this kind will live in a good green-houſe, or may be preſerved through the winter under a common hot-bed frame; but then they will not flower ſo often, nor ſend out ſo many offsets, as when they are placed in a moderate ſtove in winter. This will produce its flowers two or three times in a year, and is not regular to any ſeaſon; but from March to the beginning of September, the flowers will be produced when the roots are in vigour. The ſtems of theſe flowers are produced from the ſides of the bulbs, ſo that after the flowers produced on one ſide are decayed, there is another ſtalk ariſes from the other ſide of the bulb; but there is no more than one flower produced on the ſame ſtalk. The flowers are large, and of a very deep red; the under petals, or flower-leaves, are very large, and the whole flower ſtands nodding on one ſide of the ſtalk, making a beautiful appearance.

It is propagated by offsets, which may be taken off every year; the beſt time to ſhift and part theſe roots is in Auguſt, that they may take good root before winter; in doing of this, there ſhould be care taken not to break off the fibres from their roots. They ſhould be planted in pots of a middling ſize, filled with light kitchen-garden earth; and if they are kept in a moderate degree of warmth, they will produce their flowers in plenty, and the roots will make great increaſe.

The ſixth ſort, which is commonly called the Mexican Lily, is not ſo hardy as the former ſort, ſo muſt be placed in a warm ſtove; and if the pots are plunged into a hot-bed of tanners bark, the roots will thrive better, and the flowers will be ſtrong. This is increaſed by offsets, as the others of this tribe; and flowers uſually the beginning of ſpring, when it makes a fine appearance in the ſtove: the flower-ſtems of this ſort, ſeldom riſe more than one foot high, each ſtem ſupports two, three, or four flowers, rarely more than that number. The flowers are large, and of a bright copper colour, inclining to red; the ſpatha, or ſheath, which covers the buds before they open, divides into two parts to the bottom, ſtanding on each ſide the umbel of flowers, joined to the ſmall foot-ſtalks.

The eighth ſort is alſo tender, and muſt be treated in the ſame manner as the ſixth; this is more common in the gardens in Holland than in this country, and as it is a plant which increaſes but ſlowly, will not be very common here. This flowers uſually in June and July, and ſometimes the ſame root will flower again in autumn; for if the pots are plunged into a bed of tanners bark, the roots generally flower twice every year, but the flowers are not of long duration. This grows naturally in the Weſt-Indies, from whence I have received roots and ſeeds.

The ſeventh and ninth ſorts are more hardy, and may be treated in the ſame manner as the Jacobæa Lily; theſe will increaſe pretty faſt by offsets, when they are properly managed, eſpecially the ninth, which ſends out many offsets, ſo as to fill the pots with roots, but it ſeldom flowers in England. The leaves of this are long and narrow, not much unlike thoſe of the Snowdrop. The petals of the flower turn back like thoſe of the Guernſey Lily, but are of a lighter colour, rather inclining to ſcarlet; the roots of this are ſmall. The ſeventh ſort uſually flowers in winter, if the pots are placed in a moderate ſtove; and as at that ſeaſon there are few flowers in the open air, theſe are more valuable on that account.

I received roots of both theſe ſorts from the Cape of Good Hope, which have ſucceeded in the Chelſea garden. The ſeventh ſort produces a great number of flowers in each umbel, which are of a deep purple colour, but the ſtalk which ſupports them, rarely riſes more than three or four inches high; theſe flowers appear in December. The roots of this ſort are very large, and the leaves are long, but narrow.

The eleventh ſort is figured by Ferrarius in his Garden of Flowers, as alſo by Morriſon in his Hiſtory of Plants; but Dr. Heiſter has ſeparated this from the genus, and has conſtituted a new genus by the title of Brunſwigia, in honour to the duke of Brunſwic. But although the ſhape of the flowers in this plant are different from moſt of the others of this genus, yet as there is a unformity in the characteriſtic notes of the genus, it ſhould not be ſeparated; for the Jacobæa Lily differs in the form of its flowers, from the other ſpecies, full as much as this, therefore might for the ſame reaſon be ſeparated from this genus.

This grows naturally at the Cape of Good Hope, from whence I have received the roots, which have ſucceeded in the Chelſea garden. The bulbs of this ſort are large and almoſt round, the leaves are long, broad, and rounded at their extremities; theſe ſpread two ways on the ſurface of the ground; and do not come up till after the flower-ſtem appears, which is generally in November; and after the flowers are paſt, the leaves increaſe till ſpring, and in May they begin to decay, ſo that from the middle of June to October, the roots are entirely naked of leaves.

The twelfth ſort is alſo a native of Africa, I received the roots of this from the Cape of Good Hope with the former. This produces its flowers in February and March. The ſtems of this riſe near two feet high, and have commonly but three flowers incloſed in each ſheath, or cover. The flowers are as large as thoſe of the Belladonna Lily, and are of the ſame form, growing erect, but of a deeper red colour; the leaves are long and narrow, and have a hollow furrow on their upper ſide, where there is a pale ſtripe running the length of the leaves, and are very like thoſe of the American Pancratium. Theſe leaves decay in ſummer, about the ſame time as thoſe of the former, and appear again at the ſame ſeaſon.

Both theſe ſorts may be treated in the ſame manner, as hath been directed for the Jacobæa Lily, with this difference only, of placing theſe in winter in a ſtove, where there is a moderate ſhare of warmth, for the roots of theſe will not endure ſo much cold as thoſe, nor ſhould they have ſo much water given them.

The beſt time to tranſplant theſe roots is about the beginning of Auguſt, when their leaves are quite decayed, before they put out new fibres, for it will be very improper to remove them afterwards.

All theſe bulbous-rooted flowers delight in a looſe ſandy earth, mixed with good kitchen-garden mould; and in the culture of them there ſhould be but little water given them at thoſe times when their leaves decay, and the roots are not in a growing ſtate, for much moiſture at that time will often cauſe them to rot; but when they are growing, and putting out their flower-ſtems, they ſhould be frequently refreſhed with water, but not given in too great quantities at a time. The pots, with the tender ſorts, ſhould conſtantly be kept in the ſtove; and in ſummer they ſhould have as much free air as poſſible; for although ſome of theſe ſorts may be kept abroad in ſummer, yet thoſe do not thrive ſo well, nor flower ſo conſtantly, as thoſe which are treated in the manner here deſcribed.

The fifth ſort, which is called the Belladonna Lily, was brought to England from Portugal, where the gardens ſome years ago abounded with theſe flowers; for the roots increaſe very faſt, eſpecially in ſuch countries where they live in the open air. The gardens in Italy have alſo great quantities of theſe flowers, eſpecially about Florence; where, at the ſeaſon of their flowering, they are commonly ſold in the markets to adorn their rooms; the Italians call it Narciſſus Belladonna. This plant thrives ſo well in Italy, as to need no other culture than the common Lily; and although it does not flower until Auguſt, yet it commonly produces good ſeeds in that country, from which they propagate them in great plenty; but with us they require more care, otherwiſe they cannot be preſerved. The roots of this ſort were generally planted in pots, and placed under a hot-bed frame, to ſcreen them from the froſt in winter; for as their green leaves come out in autumn, and continue growing all the winter, ſo when they are expoſed to the froſt, whereby their leaves are killed, the roots will be in danger of periſhing; but if they ſhould ſurvive, they will be greatly weakened by it. With this culture the roots were preſerved, but they did not conſtantly flower, nor put out many offsets, ſo that few gardens were furniſhed with this plant; and of late years the roots have been ſcarce in Portugal, for the Jacobæa Lily having been introduced into that country, has ſupplanted the other, in moſt of their gardens, ſo that the roots which have been brought from thence of late years for the Belladonna Lily, have proved the Jacobæa Lily.

The method in which I have cultivated this plant for ſome years paſt, with great ſucceſs, is as follows. I prepared a border cloſe to a ſouth-weſt aſpected wall, of about ſix feet wide, in the following manner, viz. I removed all the earth to the depth of three feet, then I put ſome very rotten dung in the bottom, ſix inches thick, upon which I laid light garden mould about twenty inches deep; after making this level, I placed the roots at ſix inches diſtance every way, and then covered them over with light ſandy earth, to the height of the border, whereby the upper part of the roots were five or ſix inches buried, and in the winter I covered the border all over with rotten tanners bark, three inches deep, to prevent the froſt from penetrating the ground; and when the froſt was very ſevere, I laid ſome mats or ſtraw over the leaves to protect them from being killed. With this management the roots have greatly increaſed, and have conſtantly flowered every year; ſome of them have put out two or three ſtems, which grew near three feet high, and produced many flowers in each umbel, which have made a fine appearance during the month of October. The green leaves come up ſoon after, and abide all the winter and ſpring until June, at which time they decay; ſoon after which the roots ſhould be tranſplanted, for if they are let ſtand till July, they will have ſent forth new fibres, when it will greatly injure the roots, if they are diſturbed. If ſome of theſe roots are planted in a warm border, cloſe to a ſouth wall, and on a dry ſoil, they will thrive very well, eſpecially if they are covered in ſevere froſt; and theſe roots will flower much ſtronger

than

than thoſe which are kept in pots, and will multiply faſter.

The fourth ſort is ſuppoſed to come originally from Japan, but has been many years cultivated in the gardens of Guernſey and Jerſey; in both which places, they ſeem to thrive as well as if it was their native country; and from thoſe iſlands their roots are ſent annually to the curious in moſt parts of Europe, and are commonly called Guernſey Lilies. The roots of this plant are generally brought over in June and July; but the ſooner they are taken out of the ground after their leaves decay, they are the better: for although the roots which are taken up when their flower-ſtems begin to appear, will flower, yet their flowers will not be ſo large, nor will their roots be near ſo good after, as thoſe which were removed before they had ſent out freſh fibres.

When theſe roots come over, they ſhould be planted in pots filled with freſh, light, ſandy earth, mixed with a little very rotten dung, and placed in a warm ſituation, obſerving now and then to refreſh the earth with water: but by no means let them have too much wet, which would rot their roots, eſpecially before they come up. About the middle of September, ſuch of the roots as are ſtrong enough to flower, will begin to ſhew the bud of their flower-ſtem (which is commonly of a red colour); therefore you ſhould remove theſe pots into a ſituation where they may have the full benefit of the ſun, and may be ſheltered from ſtrong winds: but by no means place them too near a wall, nor under glaſſes, which would draw them up weak, and render them leſs beautiful. At this ſeaſon they ſhould be gently refreſhed with water, if the weather be warm and dry; but if it ſhould prove very wet, they ſhould be ſcreened from it.

When the flowers begin to open, the pots ſhould be removed under ſhelter, to prevent the flowers from being injured by too much wet: but they muſt not be kept too cloſe, nor placed in a ſituation too warm, which would occaſion their colour to be leſs lively, and haſten their decay. The flowers of this plant will continue in beauty (if rightly managed) a full month; and though they have no ſcent, yet, for the richneſs of their colour, they are juſtly eſteemed in the firſt rank of the flowery tribe.

After the flowers are decayed, the green leaves will begin to ſhoot forth in length, and if ſheltered from ſevere cold, will continue growing all the winter; but they muſt have as much free air as poſſible in mild weather, and covered only in great rains or froſts; for which purpoſe, a common hot-bed frame is the propereſt ſhelter for them; under which if they are placed, the glaſſes may be taken off conſtantly every day in dry open weather, which will encourage the leaves to grow ſtrong and broad; whereas when they are placed in a green-houſe, or not expoſed to the open air, they will grow long and ſlender, and have a pale weak aſpect, whereby the roots will become weak, ſo that it ſeldom happens that they produce flowers under ſuch management.

Theſe roost ſhould be tranſplanted every fourth or fifth year toward the latter end of June, or beginning of July, and planted into freſh earth (but they ſhould not be oftener removed, for that would retard their flowering.) The offsets ſhould alſo be taken off, and planted into ſeveral pots, which, in three years time, will produce flowers; ſo that after a perſon is once ſtocked with theſe roots, they may increaſe them, ſo as to have a ſupply of blowing roots, without being at the trouble or expence of ſending to Guernſey every year for freſh roots; and the roots preſerved here will flower ſtronger than thoſe which are uſually brought from thence, for the inhabitants of thoſe iſlands are not very curious in cultivating them. Their uſual method is to plant them at a great diſtance in a bed of common earth, where they let them remain for many years: in which time they produce ſuch a number of offsets, that many times one ſingle cluſter has contained above a hundred roots; by which means, thoſe which grow on the inſide are ſo much compreſſed

by the outer roots, that they are perfectly flatted; and from the number of roots growing in each cluſter, they are all rendered weak, and unfit to produce ſuch large ſtems of flowers, as thoſe which have grown ſingle, and are of a ſpherical figure.

But when a perſon is poſſeſſed of a large number of theſe roots, it will be troubleſome to preſerve them in pots, therefore there ſhould be a bed prepared of the following earth, in ſome well ſheltered part of the garden, viz. Take a third part of freſh virgin earth from a paſture ground, which is light, then put near an equal part of ſea ſand, to which you ſhould add rotten dung, and ſifted lime rubbiſh, of each an equal quantity. With this earth (when well mixed and incorporated) you ſhould make your bed about two feet thick, raiſing it about four or five inches above the ſurface of the ground, if the ſituation be dry; but if the ground be wet, it ſhould be raiſed eight or nine inches higher. In this bed, about the beginning of July (as was before directed), you ſhould plant the roots about ſix or eight inches aſunder each way; and in the winter, when the froſt begins, you ſhould either cover the bed with a frame, or arch it over, and cover it with mats and ſtraw, to prevent their leaves from being pinched with cold; but in the ſpring the covering may be entirely removed, and the bed kept conſtantly clear from weeds, during the ſummer, obſerving to ſtir the ſurface of the earth now and then; and every year, when the leaves are decayed, you ſhould ſhift a little freſh earth over the beds, to encourage the roots. In this bed the roots may remain until they are ſtrong enough to produce flowers, when they may be taken up and planted in pots, as was before directed, or ſuffered to remain in the ſame bed to flower.

The roots of theſe plants do not flower again the ſucceeding year (as in many other ſorts of bulbs;) but if their bulbs contain two buds in their center, as is often the caſe, they very often flower twice within the compaſs of three years; after which, the ſame individual root does not flower again in ſeveral years, but only the offsets from it.

AMBROSIA [ſo called from ἀ privative and βροτὸς mortal,] becauſe feigned by the poets to be the food of the gods.

The CHARACTERS are,

It hath male and female flowers on the ſame plant. The male flowers are compoſed of many florets, which are included in one common empalement of one leaf, which is plain, and extended the length of the florets: each floret is of one leaf, funnel-ſhaped, and cut into five parts at the brim; in the center is ſituated the five ſmall ſtamina, which are crowned with pointed erect ſummits. The female florets are placed under the male in the ſame ſpike; theſe have an empalement of one leaf, which is pointed and permanent: they have no petals, but an oval germen placed in the bottom of the empalement, ſupporting a ſlender ſtyle, crowned with two long hairy ſtigma. The germen afterward becomes an oval hard capſule with one cell, crowned with the acute ſegments of the empalement, and incloſing one roundiſh ſeed.

This genus of plants, is by Dr. Linnæus ranged in the fifth diviſion of his twenty-firſt claſs, entitled Monœcia Pentandria, from their having male and female flowers in the ſame plant, and the male flowers having five ſtamina.

The SPECIES are,

1. AMBROSIA (*Maritima*) foliis multifidis racemis ſolitaris piloſis. Lin. Sp. Plant. 988. *Ambroſia with leaves divided into many parts, and ſingle hairy ſpikes of flowers.* Ambroſia maritima. C. B. P. Sea Ambroſia.
2. AMBROSIA (*Elatior*) foliis bipinnatifidis, racemis paniculatis terminalibus glabris. Hort. Upſal. 284. *Ambroſia with double winged leaves, a ſmooth looſe ſpike of flowers growing at the extremity of the branches.* Ambroſia maritima foliis artemiſiæ inodoris elatior. H. L. 32.
3. AMBROSIA (*Trifida*) foliis trilobis & quinquelobis ſerratis. Lin. Sp. 988. *Ambroſia with leaves having three and five lobes,*

lobes, which are ſawed on their edges. Ambroſia Virginiana maxima, platani orientalis folio. Mor. Hiſt. 3. p. 4.

4. AMBROSIA (*Artemiſiſolia*) foliis bipinnatifidis primoribus ramulorum indiviſis integerrimis. Lin. Sp. Plant. 988. *Ambroſia with double winged leaves, and the younger branches having entire leaves.* Ambroſia maxima inodora marrubii aquatici foliis tenuiter laciniatis Virginiana. Pluk. Alm. 27. tab. 10.

5. AMBROSIA (*Arboreſcens*) foliis pinnatifidis hirſutis racemis ſolitariis terminalibus, caule fruticoſo perenne. *Ambroſia with hairy winged leaves, ſingle ſpikes of flowers growing at the extremity of the branches, and a ſhrubby perennial ſtalk.*

The firſt ſort grows naturally in Cappadocia, &c. near the ſea ſhore; this riſes about two feet and a half high, ſending out branches, garniſhed with leaves divided into many parts, and upon being handled emit a ſtrong odour. The ſpikes of flowers are produced from the wings of the ſtalks, which are long, ſingle, and hairy; the upper part being furniſhed with many male flowers, and the lower part with female flowers; theſe grow cloſe to the ſtalk. After the flowers are paſt, the female flowers are ſucceeded by hard leafy capſules having one cell, in which is included a ſingle round ſeed. This is an annual plant, which ſeldom perfects its ſeeds in England, unleſs the plants are brought forward in the ſpring; therefore the ſeeds ſhould be ſown in the autumn in a warm border, and when the plants come up in the ſpring, they ſhould be tranſplanted into another warm border of poor ground; for when theſe plants are put into rich moiſt land, they grow very luxuriantly, ſo do not flower till late in the ſeaſon. Therefore the beſt method to obtain good ſeeds, is to plant ſome of the plants in lime rubbiſh, to prevent their luxuriant growth, which will cauſe them to flower early, whereby good ſeeds may be obtained.

If the ſeeds ripen and are permitted to ſcatter, the plants will come up the following ſpring without care; for when the ſeeds are ſown in the ſpring, the plants ſeldom come up the ſame year, but will remain in the ground a year before they vegetate. There is not much beauty in this plant, ſo it is not often admitted to have a place in gardens, except in thoſe where a variety of plants are preſerved.

The ſecond ſort grows naturally in the iſlands of America, as alſo in Carolina and Virginia; from the two latter countries I have frequently received the ſeeds, and in the tubs of earth which came with plants from the former, the plants have come up in plenty, ſo is undoubtedly a common weed there. This grows more than three feet high, dividing into many branches; garniſhed with winged leaves in ſhape like thoſe of Mugwort; at the extremity of each branch, the looſe ſpikes of flowers are produced, compoſed of one long ſpike in the middle, and three or four ſhorter lateral ſpikes: theſe are ſmooth, and have male and female flowers ranged in the ſame manner as the former; the female flowers are ſucceeded by ſeeds of the ſame ſhape.

This ſort will come up and thrive in the open air in England, but the plants ſo raiſed will not produce good ſeeds, unleſs the ſeaſon is warm; therefore to obtain them every year, it is neceſſary to cultivate them in the following manner.

The ſeeds of this plant ſhould be ſown on a moderate hot-bed in March, and when the plants are come up two inches high, they muſt be tranſplanted into another moderate hot-bed, allowing each plant three or four inches ſquare; obſerving to water them pretty well, and ſhade them until they have taken new root; afterward they muſt have a large ſhare of freſh air every day, when the weather is warm, and frequent waterings, for they are very thirſty plants. When the plants are grown pretty ſtrong, they muſt be taken up with balls of earth to their roots, and planted in large pots filled with light earth; and if they are placed on a very moderate hot-bed until they are well rooted, it will greatly forward their flowering. Toward the latter end of May they ſhould be placed abroad with other hardy annual plants, among which they will make a variety. Theſe will flower in July, and their ſeeds ripen in September.

The third ſort is a native of North America, where it is a very common weed. This often grows eight or ten feet high; and if it is planted in a rich moiſt ſoil, or is often watered, it will grow much higher, and ſpread out into many branches. The ſeeds of this plant, when ſown in the ſpring, ſeldom come up the firſt year, but frequently remain in the ground until the following ſpring; ſo that when the plants do not come up, the ground muſt not be diſturbed till after the ſpring following. When the plants come up, ſome of them may be tranſplanted into a moiſt rich ſoil, allowing them at leaſt four or five feet room every way; if they are frequently watered in dry weather, they will grow to a large ſize; but their branches muſt be ſupported by ſtakes, otherwiſe they are very ſubject to break with ſtrong winds. The flowers of this plant are not more conſpicuous than thoſe of the Hemp, to which theſe are near akin; therefore are only preſerved by ſuch perſons as are curious in botany, for the ſake of variety. If the ſeeds of this ſort ripen and are ſuffered to ſcatter, the plants will come up the following ſpring, provided the ground is not diſturbed; or if the ſeeds are ſown in autumn, the plants will come up the following ſpring, and may be treated as above.

The fourth ſort grows naturally in North America, from whence I have frequently received the ſeeds. This divides into many branches, the lower part of which are garniſhed with whole leaves, but the upper part hath compound leaves reſembling thoſe of the ſecond ſort; the ſpikes of flowers are produced from the wings of the ſtalks, in which this differs from the ſecond. This may be treated in the ſame manner as the ſecond ſort.

The fifth ſort is a native of Peru, from whence the younger Juſſieu ſent the ſeeds to the royal garden at Paris, and by the generoſity of his brother Dr. Barnard de Juſſieu, I was favoured with this plant, which has ſucceeded in the Chelſea garden, where it annually perfects its ſeeds.

This grows to the height of ten or twelve feet, with a woody ſtem, dividing into ſeveral branches, garniſhed with hairy leaves, compoſed of ſeveral winged lobes, and are placed alternately upon the branches; the ſpikes of flowers are ſingle, hairy, and are produced at the extremity of the branches. The female flowers (which are ſituated below the male, on the ſame ſpikes) grow in ſmall cluſters, at ſeparate diſtances, each having two long narrow ſegments of the empalement, which riſe above the capſule or ſeed veſſel.

This is a perennial plant, and may be propagated by cuttings or ſeeds; if by the former, they ſhould be planted in a ſhady border, in either of the ſummer months; theſe will require to be frequently watered: in a month or five weeks they will have good roots, therefore ſhould then be taken up and potted; for when they are left longer in the full ground, they will grow very luxuriant, and not ſo ſoon recover their removal, as thoſe which are tranſplanted earlier. Theſe plants are hardy, ſo may be expoſed to the open air in ſummer; and in the winter, if they are ſheltered in a common green-houſe, with Myrtles and other hardy exotic plants, they will live ſeveral years. In mild winters, the roots of this plant have lived in the full ground in a warm border, without any covering, but hard froſt will kill them.

The ſeeds of this ſort ſeldom come up the ſame year, when they are ſown in ſpring, but thoſe which have fallen in the autumn, have grown the following year, and ſo have thoſe which have been ſown at the ſame ſeaſon.

AMELANCHIER. See CHIONANTHUS.

AMELLUS, Star-flower.

The CHARACTERS are,

The common flower-cup is round and ſcaly; the flower is of the compound radiated kind; the hermaphrodite flowers compoſe

compoſe the diſk, and the female the rays: the hermaphrodite are tubulous, with five ſegments; the female are tongue-ſhaped, divided into two or three ſegments; the firſt have five ſhort ſtamina, an oval germen with a ſlender ſtyle, and two ſtigmas; the female are like them. The flower-cup afterward contains one oval ſeed, crowned with hairy down.

This genus of plants is ranged by Dr. Linnæus in the ſecond ſection of his ninteenth claſs; the flowers of this ſection are compoſed of hermaphrodite florets in the center, and female in the circumference.

The SPECIES are,

1. AMELLUS (*Lychnitis*) foliis oppoſitis lanceolatis obtuſis, pedunculis unifloris. Lin. Sp. 1276. *Star-flower with ſpear-ſhaped obtuſe leaves placed oppoſite, and one flower on each foot-ſtalk.*
2. AMELLUS (*Umbellatus*) foliis oppoſitis triplinerviis ſubtus tomentoſis, floribus umbellatus. Amœn. Acad. 5. p. 407. *Star-flower with oppoſite leaves having three veins, and flowers in umbels.*

The firſt ſort grows naturally at the Cape of Good Hope. It riſes from two to three feet high, ſending out branches on every ſide, garniſhed with ſpear-ſhaped leaves placed oppoſite, terminated by flower-ſtalks, each ſupporting one Violet-coloured flower, with a yellow diſk, ſhaped like thoſe of the After, which appear in July or Auguſt.

This is a perennial plant, which is eaſily propagated by cuttings, which, if planted in ſhade during any of the ſummer months, and duly watered, will put out roots; theſe ſhould be taken up with balls of earth to their roots, and planted in pots, that they may be ſheltered in winter, either under a common frame, or in a green-houſe, where they may have plenty of air in mild weather, otherwiſe they will draw up weak and have little beauty.

The ſecond ſort grows naturally in Jamaica; this hath hoary ſtalks which riſe two feet high, ſending out ſide branches, which are garniſhed with oval leaves placed oppoſite; the flowers which terminate the branches grow in ſmall umbels, but theſe have little beauty. It may be propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; when the plants are fit to remove, two or three of them ſhould be planted in pots, then plunged into a hot-bed of tan, to bring them forward to get ripe ſeeds in the autumn, otherwiſe the plants will require a ſtove in winter.

AMENTACEOUS flowers [of *Amentum*, *Lat.* a ſtring, thong, or latchet] are ſuch as have an aggregate of ſummits, hanging down in form of a rope, or cat's tail, which is alſo called an Iulus; as in Willows, Walnuts, Poplars, &c.

AMETHYSTEA. Lin. Gen. 32. Amethyſtina. Amman. Haller. Amethyſt.

The CHARACTERS are,

The flower hath a permanent bell-ſhaped empalement of one leaf, cut into five equal pointed ſegments at the brim; the flower is of one leaf, of the lip kind, divided into five unequal parts at the top; the upper leaf is erect, roundiſh, concave, and cut into two; the lower lip is cut into three parts, the middle ſegment being concave and of the ſame length with the upper lip, but the two ſide ſegments are ſhorter and erect. It hath two ſlender ſtamina, which ſtand under the upper lip, but are longer; theſe are crowned with roundiſh ſummits. In the center is ſituated a quadrifid germen, ſupporting a ſingle ſtyle, crowned with two acute ſtigma: after the flower is paſt, the germen becomes four naked ſeeds, ſhut up in the empalement.

This genus of plants is by Dr. Linnæus ranged in his ſecond claſs of plants, entitled Diandria Monogynia, the flower having two ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

AMETHYSTEA. Hort. Upſal. 9. Amethyſtina montana erecta foliis exiguis digitatis trifidis ſerratis, floſculis cum comâ è cœruleo-janthinis. Amman. Ruth. 4. i. e. *Mountain upright Amethyſt, with ſmall, trifid, ſawed leaves, and the heads and flowers of a jacinth blue.*

This plant is a native of the mountains in Siberia,

from whence the ſeeds were ſent to the imperial garden at Peterſburgh, where the plants flouriſhed and perfected their ſeeds, part of which were ſent me by the late Dr. Amman, which grew in the Chelſea garden, where the plants annually produce ſeeds.

It is an annual plant with an upright ſtalk, which riſes about a foot high; toward the top it puts out two or three ſmall lateral branches, garniſhed with ſmall trifid leaves, ſawed on their edges, of a very dark green colour; at the extremity of the branches the flowers are produced in ſmall umbels; they are of a fine blue colour, as are alſo the upper part of the branches, and the leaves immediately under the umbel; ſo that although the flowers are ſmall, yet from their colour with thoſe of the upper part of the ſtalks, the plants make a pretty appearance, during their continuance in flower. If the ſeeds of this plant are ſown in the autumn, or are permitted to ſcatter, the plants will come up early the following ſpring, and theſe will flower the beginning of June; but thoſe which are ſown in the ſpring, will not flower till July; and in dry ſeaſons, the ſeeds will remain in the ground a whole year, ſo that the beſt time for ſowing them is in the autumn.

When the plants come up, they will require no other care but to keep them clean from weeds, and where they are too cloſe to thin them; for they do not thrive when tranſplanted, therefore the ſeeds ſhould be ſown where they are to remain.

AMMANNIA. Houſt. Nov. Gen. Lin. Gen. Plant. 144.

The CHARACTERS are,

It hath a bell-ſhaped, oblong, erect, permanent empalement, having four angles, and divided at the brim into eight ſlender parts. The flower hath no petals, but four ſlender ſtamina which are as long as the empalement in which they are inſerted. Theſe are crowned with double ſummits. In the center is ſituated a large round germen, ſupporting a ſhort ſtyle crowned with a ſtigma; the empalement afterward becomes a round capſule with four cells, which are filled with ſmall ſeeds.

This genus is by Dr. Linnæus ranged in his fourth claſs of plants, entitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

The SPECIES are,

1. AMMANNIA (*Latifolia*) foliis ſemiamplexicaulibus, caule tetragono. Hort. Cliff. 344. *Ammannia with a ſquare ſtalk, and leaves embracing it half round.* Ammannia paluſtris, caule quadrangulari foliis anguſtis. Houſt. MSS.
2. AMMANNIA (*Ramoſior*) foliis ſubpetiolatis caule ramoſa. Lin. Sp. Plant. 120. *Ammannia with leaves having ſhort foot-ſtalks and a branching ſtalk.* Ludvigia aquatica erecta caule rubente, foliis ad genicula binis longis anguſtis hyſſopi inſtar flore tetrapetalo albo. Clayt.
3. AMMANNIA (*Baccifera*) foliis ſubpetiolatis capſulis calyce majoribus coloratis. Lin. Sp. Plant. 120. *Ammania whoſe leaves have ſhort foot-ſtalks, and a coloured ſeed-veſſel larger than the flower-cup.*

The firſt ſort grows naturally in moiſt places in Jamaica, from whence Dr. Houſton ſent the ſeeds to England, which ſucceeded at Chelſea, and have from thence been diſtributed to moſt of the botanic gardens in Europe.

It grows about a foot and a half high, with an upright ſquare ſtalk, and long narrow leaves ſet in form of a triangle, whoſe baſe half ſurrounds it; theſe grow the whole length of the ſtem. They are of a pale green, and of the conſiſtence of thoſe of Purſlane; the ſtalks are alſo ſucculent, and of the ſame colour with thoſe of that plant. The flowers come out in whorles round the ſtalks, at the joints where the leaves adhere, in cluſters: theſe have no petals, ſo make no great appearance, and are ſoon ſucceeded by round ſeed-veſſels, which are full of ſmall ſeeds.

The plant muſt be raiſed on a hot-bed in the ſpring, and afterward removed to another hot-bed to bring it forward. When the plants have acquired ſtrength, they ſhould be tranſplanted into pots filled with rich

light earth, and placed under a frame, obſerving to ſhade them till they have taken freſh root; then they ſhould be placed in a glaſs-caſe or ſtove to ripen their ſeeds, for the plants are too tender to thrive in the open air in this country, unleſs the ſummer proves very warm.

The ſecond ſort grows naturally in Virginia and Carolina; this is an annual plant, which riſes about a foot high, with red ſucculent ſtalks, putting out ſide branches, which grow oppoſite: the flowers are produced ſingle from the wings on the lower part of the branches, but toward the top they are in cluſters; theſe have no beauty, ſo are only preſerved in botanic gardens for the ſake of variety. This ſort will perfect its ſeeds in the open air, if the plants are raiſed on a hot-bed in the ſpring, and planted in a warm border.

The third ſort grows naturally in China; this is a very low plant, ſeldom riſing more than three inches high; the leaves are placed oppoſite on the branches, and the flowers grow in whorles from the wings of the ſtalk. As this plant has little beauty, it is rarely preſerved in gardens. It muſt be raiſed on a hot-bed in the ſpring, and treated in the ſame manner as the firſt ſort, with which management the ſeeds will ripen in England.

AMMI [Ἄμμι, *Gr.*] Biſhops-weed.

The CHARACTERS are,

It is an umbelliferous plant; the great umbel is compoſed of many ſmaller, which are diſpoſed like rays. The outer involucrum is compoſed of many narrow-pointed leaves, which are almoſt the length of the umbel. The ſmall umbels have a ſhort many-leaved involucrum. The flowers are difform, each having five petals, which are heart-ſhaped; thoſe in the outer rays being large and unequal in ſize, but thoſe in the center, which compoſe the diſk, are nearly equal. The flowers have five ſlender ſtamina, which are crowned with roundiſh ſummits. In the center of the empalement is ſituated the germen, ſupporting two reflexed ſtyles, crowned with obtuſe ſtigma. The germen afterward becomes a ſmall, round, ſtriated fruit, compoſed of two ſeeds, which are plain within and convex on their outſide.

This genus of plants is by Dr. Linnæus ranged in the ſecond ſection of his fifth claſs, entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. AMMI (*Majus*) foliis inferioribus pinnatis lanceolatis ſerratis, ſuperioribus multifidis linearibus. Hort. Upſal. 59. *Biſhops-weed with under leaves, which are winged, ſpear-ſhaped, and ſawed, and the upper leaves are divided into many narrow ſegments.* This is the Ammi majus. C. B. P. 159. And the Ammi vulgare. Dod. p. 415. *Common Biſhops-weed.*
2. AMMI (*Glaucifolium*) foliorum omnium lacinulis lanceolatis. Guett. 2. p. 433. i. e. *Biſhops-weed with all its leaves cut in ſhape of a ſpear.* Ammi petræum glaucifolium perenne. Mor. Hiſt. 3. p. 295.

The firſt ſort is annual; of this there is a variety, which is mentioned by John Bauhin as a diſtinct ſpecies, under the title of Ammi majus foliis plurimum inciſis & nonnihil criſpis; but I have frequently had this variety ariſe from the ſeeds of the former, ſo I have not enumerated it as a different ſort.

This plant is propagated by ſeeds, which ſhould be ſown in the autumn in the place where it is to remain; and in the ſpring, the ground ſhould be hoed to cut up the weeds, and alſo to thin the plants in the ſame manner as is practiſed for Carrots, leaving them four or five inches aſunder; or if the ground is good where they grow, they muſt be left at leaſt ſix inches, for they will grow large and cover the ground; after this they will require no farther care, but to keep them clean from weeds. In June they will flower, and their ſeeds will ripen in Auguſt, which ſhould be gathered as it ripens, otherwiſe it will ſoon ſcatter. Theſe ſeeds are uſed in medicine, ſo may be had in plenty with this management; for it will grow in any ſituation that is open, but thrives beſt on light ſandy land. When the ſeeds are ſown in the ſpring, they ſeldom come up the ſame year; and if they ſhould, thoſe plants will be weak and produce few ſeeds.

The ſecond ſort is a perennial plant, which is preſerved in botanic gardens for variety, but having little beauty, is rarely admitted into other gardens. It may be propagated by ſeeds, which ſhould be ſown in the autumn, becauſe thoſe ſown in the ſpring, ſeldom come up the ſame year. It will grow in any open ſituation, is very hardy, and thrives beſt on a moiſt ſoil.

AMMI PERENNE. See SIUM.

AMOMUM. Lin. Gen. Plant. 2. Zinziber. C. B. P. 35. Ginger.

The CHARACTERS are,

The flowers are collected into a ſcaly ſpike, each having a double (ſpatha) or ſheath; the outer ſheath looſely covers the ſcale, and the inner encompaſſes the tube of the flower with the parts of generation: the flower is of one leaf, tubulous below, but divided into three parts at the brim, the middle ſegment being longer and broader than the others. In the boſom of the flower is ſituated an oblong thick nectarium. From the tube of the flower ariſes two ſlender ſtamina, which are crowned with thick ſhort ſummits. Under the receptacle of the flower is placed the round germen, ſupporting a ſingle ſtyle, which is as long as the tube of the flower, crowned with a hairy ſtigma. The germen afterward becomes an oval three-cornered ſeed-veſſel, opening in three parts, containing ſeveral ſeeds.

This genus of plants is by Dr. Linnæus ranged in his firſt claſs, entitled Monandria Monogynia; but it more properly belongs to his ſecond, for the flowers of this have two ſtamina, one of which is joined to the upper ſegment of the flower, and this ſoon loſes it ſummits, ſo appears to be only a ſegment. This I have conſtantly found in all the flowers which I have examined; the flowers have but one ſtyle.

The SPECIES are,

1. AMOMUM ſcapo nudo ſpicâ ovato. Hort. Cliff. 3. *Amomum with a naked ſtalk and oval ſpike of flowers.* Zinziber. C. B. P. 35. *Ginger.*
2. AMOMUM ſcapo nudo ſpicâ oblongâ obtuſâ. Hort. Cliff. 3. *Amomum with a naked ſtalk and an oblong blunt flower-ſpike.* Zinziber latifolium ſylveſtre. Hort. Lugd. 636. *Broad-leaved wild Ginger, called Zerumbet.*
3. AMOMUM ſcapo bracteis alternis laxis, caule foliorum altiſſimo. *Amomum with flower-ſtalks looſely branching alternately, and very tall leaf-ſtalks.*

The firſt, which is the common Ginger, is cultivated for ſale in moſt of the iſlands of America, but is a native of the Eaſt-Indies, and alſo of ſome parts of the Weſt-Indies, where it is found growing naturally without culture. The dried roots of this ſort furniſh a conſiderable export from the Britiſh colonies in America. The roots are of great uſe in the kitchen, as alſo in medicine; and the green roots preſerved as a ſweatmeat, are preferable to every other ſort.

The roots of this ſort are jointed, and ſpread in the ground; theſe put out many green reed-like ſtalks in the ſpring, which riſe to the height of two feet and a half, garniſhed with long narrow leaves, cloſely embracing the ſtalks at their baſe. The flower-ſtems afterward ariſe by the ſide of theſe, immediately from the root; theſe are naked, ending with an oblong ſcaly ſpike; from each of theſe ſcales is produced a ſingle blue flower, whoſe petals are but little longer than the ſquamoſe covering. The flowers appear in September, and in about a month after the ſtalks entirely decay, ſo that the roots remain inactive three or four months.

The ſecond ſort grows naturally in India; the roots of this are much larger than thoſe of the firſt, but are jointed in the ſame manner. The ſtalks grow from three, to near four feet high, garniſhed with oblong leaves, placed alternately, and embrace the ſtalks at their baſe. The flower-ſtems ariſe immediately from the root; theſe are terminated by oblong, blunt, ſcaly heads; out of each ſcale is produced a ſingle white flower, whoſe petals extend a conſiderable length beyond

beyond their ſcaly covering. Theſe appear in September, and in November all the ſtalks periſh in the ſame manner as the Ginger.

The third ſort hath thick fleſhy roots, reſembling thoſe of the large Flag Iris; in the ſpring theſe ſend forth many green reed-like ſtalks, which riſe to the height of ſeven or eight feet, garniſhed with very long narrow leaves, ſet alternately, cloſely embracing them at their baſe. The ſtalks decay entirely in autumn, and new ariſe from the roots in the ſpring, but it hath not produced any flowers as yet in England, though the roots thrive and increaſe greatly where they are properly managed.

All theſe ſorts are tender, and require a warm ſtove to preſerve them in this country. They are eaſily propagated by parting of their roots; the beſt time for doing this is in the ſpring, before they put out new ſhoots; for they ſhould not be tranſplanted in ſummer when they are in full vigour, nor do they ſucceed ſo well when they are removed in autumn, becauſe they remain long after in an inactive ſtate; and during that time, if wet comes to the roots, it often cauſes them to rot. When the roots are parted, they ſhould not be divided into ſmall pieces, eſpecially if they are deſigned to have flowers; for until the roots have ſpread to the ſide of the pots, they rarely put out flower-ſtems, for which reaſon they ſhould not be planted in very large pots.

Theſe plants thrive beſt in a light rich earth, ſuch as may be found in the kitchen-garden; with this the pots ſhould be filled within two inches of the top, then the roots ſhould be placed in the middle of the pots, obſerving that their crowns are upwards, and the pots filled up with the ſame rich earth; after this the pots ſhould be plunged into a hot-bed of tanners bark, and muſt be ſparingly watered, until their ſtalks appear above ground, when they will require a greater ſhare of moiſture, eſpecially during the warm ſummer months; but in autumn the waterings muſt not be often, nor in great plenty; and during the winter ſeaſon, when the roots are inactive, very little water ſhould be given them. The pots with theſe roots ſhould conſtantly remain plunged in the tan-bed, for if they are taken out and placed on ſhelves in the ſtove, their fibres frequently ſhrink, which often occaſions the roots to decay.

With this management all theſe ſorts have multiplied greatly with me, and the common Ginger has produced roots which have weighed five or ſix ounces, but the others have been near a pound weight.

AMOMUM PLINII. See SOLANUM.

AMORIS POMUM. See LYCOPERSICON.

AMORPHA. Lin. Gen. Plant. 768. Baſtard Indigo.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is tubulous, cylindrical, and cut into five ſmall obtuſe parts at the brim. The flower is of the butterfly kind; the upper petal, or ſtandard, is ſmall, concave, and erect; this is inſerted between the two upper ſegments of the empalement. It hath ten ſtamina, joined at their baſe, of unequal lengths, and crowned with ſummits; in the center is ſituated a roundiſh germen, ſupporting an awl-ſhaped ſtyle, which is the length of the ſtamina, and crowned with a ſingle ſtigma; the germen afterward becomes a reflexed moon-ſhaped pod, having one cell, in which are lodged two kidney-ſhaped ſeeds.

This genus is by Dr. Linnæus ranged in his ſeventeenth claſs of plants, entitled Diadelphia Decandria; the flowers of this claſs have ten ſtamina, nine of which are joined, and one ſtands off.

We know but one SPECIES of this genus, viz.

AMORPHA (*Fruticoſa*). Hort. Cliff. 353. *Baſtard Indigo.* Barba Jovis Americana pſeudoacaciæ foliis floſculis purpureis minimis. Cat. Hort. Chelſ. 11.

This ſhrub grows naturally in Carolina, where formerly the inhabitants made a coarſe ſort of Indigo from the young ſhoots, which occaſioned their giving it the title of Baſtard Indigo.

It riſes with many irregular ſtems, to the height of

twelve or fourteen feet, garniſhed with very long winged leaves, in ſhape like thoſe of the common Acacia. At the extremity of the ſame year's ſhoots, the flowers are produced in long ſlender ſpikes, which are ſmall, and of a deep purple colour; the ſtamina ſtand out beyond the petals, and are crowned with yellow ſummits; after the flowers are paſt, the germen turns to a ſhort pod, having two kidney-ſhaped ſeeds, but theſe do not ripen in England.

The ſeeds of this plant were ſent to England from Carolina, by Mr. Mark Cateſby, F. R. S. in 1724, from which many plants were raiſed in the gardens near London; theſe were of quick growth, and many of the plants produced flowers in three years. At preſent it is become very common in all the gardens and nurſeries, where it is propagated as a flowering ſhrub, for the ornament of the ſhrubbery. It is generally propagated by ſeeds, which are annually ſent to England from different parts of America; for it is found in many of the northern colonies there, and it may alſo be propagated by laying down of the young branches, which in one year will make good roots, and may then be taken off and planted either in the nurſery, or the places where they are deſigned to remain. If they are put into a nurſery, they ſhould not remain there more than one year; for as the plants make large ſhoots, they do not remove well when they have remained long in a place: they muſt have a ſheltered ſituation, otherwiſe their branches will be broken by the winds. As theſe ſhoots are large and ſoft, their upper parts are generally killed by froſt in winter, but they put out ſhoots again in plenty below the dead part the ſpring following.

AMPHITHEATRE [Ἀμφιθέατρον of ἀμφὶ, around, and θεάομαι, to view, *Gr.*] or temples of view erected on a double riſing, were eſteemed great ornaments to a large and noble garden. If this hill, or riſing ground, is of a ſemicircular figure, it will be ſtill the better.

Theſe amphitheatres are ſometimes formed of Evergreens, as Hollies, Phillyreas, Lauruſtinuſes, Bays, &c. obſerving to plant the ſhorteſt growing ſhrubs in the front, and the talleſt trees behind, as Pines, Firs, Cedars of Lebanon, &c.

They are alſo formed of ſlopes on the ſides of hills, and covered with turf, but are now generally excluded by all perſons of true taſte; for the natural eaſy ſlope of ſuch hills, is infinitely more beautiful than the ſtiff angular ſlopes into which theſe amphitheatres are commonly cut.

AMYGDALUS. Lin. Gen. Plant. 545. [Ἀμύγδαλος, *Gr.*] The Almond-tree.

The CHARACTERS are,

It hath a tubulous empalement of one leaf, which is cut at the brim into five obtuſe ſegments; the flower hath five oval, obtuſe, concave petals, which are inſerted in the empalement; in the center of the outer flower is ſituated a roundiſh hairy germen, ſupporting a ſingle ſtyle the length of the ſtamina, which is crowned by a round ſtigma; this is attended by a great number of ſlender erect ſtamina, which in many ſpecies are not ſo long as the petals of the flower, theſe are crowned with ſlender ſummits. After the flower is paſt, the germen becomes an oval, compreſſed, large fruit, with a thin, tough, hairy covering, having a longitudinal furrow; this opens and falls away, leaving an oval compreſſed nut, which is furrowed and netted, incloſing a ſingle ſeed of the ſame form.

Dr. Linnæus has joined to this genus the Perſica, or Peach-tree, making them only different ſpecies, ranging it in his twelfth claſs, entitled Icoſandria Monogynia; the flowers having from twenty to thirty ſtamina, which are inſerted to the empalement.

The SPECIES are,

1. AMYGDALUS (*Communis*) foliis petiolatis ſerratis petalis florum emarginatis. *Almond-tree with ſawed leaves, having foot-ſtalks, and the petals of the flower indented.* Amygdalus ſativa. C. B. P. 441. *Common Almond-tree.*

2. AMYGDALUS (*Dulcis*) foliis petiolatis marginibus crenatis, corollis calyce vix longioribus. *Almond-tree with*

with crenated leaves, having foot-ſtalks, and the petals of the flowers no longer than the empalement. Amygdalus dulcis putamine molliori. C. B. P. 441. *Commonly called Jordan Almond.*

3. Amygdalus (*Sativus*) foliis lineari-lanceolatis acuminatis, marginibus crenatis. *Almond-tree with pointed, narrow, ſpear-ſhaped leaves, crenated on their edges.* Amygdalus ſativa flore albo.

4. Amygdalus (*Orientalis*) foliis lanceolatis integerrimis, argenteis perennantibus petiolo breviore. *Almond-tree with ſpear-ſhaped ſilvery leaves, which are entire, and continue all winter, and very ſhort foot-ſtalks.* Amygdalus Orientalis foliis argenteis ſplendentibus. Du Hamel.

5. Amygdalus (*Nana*) foliis petiolatis ſerratis baſi attenuatis. *Almond with ſawed leaves, which are narrowed at the foot-ſtalk.* Amygdalus Indica nana. Pluk. Alm. 28. tab. 11. *Dwarf Almond with ſingle flowers.*

The firſt is the common Almond, which is cultivated more for the beauty of its flowers, than for its fruit. There are two varieties of this, one with ſweet, the other bitter kernels, which often ariſe from the fruit of the ſame tree.

The ſecond ſort is commonly known by the title of Jordan Almonds; the nuts of this kind are frequently brought to England; theſe have a tender ſhell, and a large ſweet kernel. The leaves of this tree are broader, ſhorter, and grow much cloſer than thoſe of the common ſort, and their edges are crenated. The flowers are very ſmall, and of a pale colour, inclining to white. I have ſeveral times raiſed theſe trees from the Almonds which came from abroad, and always found the plants to maintain their difference from the common Almond.

The third ſort hath narrow ſharp-pointed leaves, which are ſawed on their edges; the flowers are much ſmaller than thoſe of the common Almond, and are white; the ſhoots of this tree are ſmaller, and the joints cloſer than thoſe of the common ſort, nor is the tree ſo hardy, therefore ſhould have the advantage of a warm ſituation, otherwiſe it will not thrive. This ſort flowers early in the ſpring, and rarely produces fruit in England. But from an old tree which grew againſt a ſouth-weſt aſpected wall, I have ſome years had the fruit ripe, which were well flavoured, but their kernels were ſmall.

The fourth ſort was found growing near Aleppo, from whence the fruit was ſent to the duke D'Ayen in France, who raiſed ſeveral of the plants in his curious garden at St. Germains, and was ſo good as to ſend me a ſhare of them, which are flouriſhing in the Chelſea garden, where they have endured the open air for ſome years, againſt a wall, without any covering. The leaves of this tree are ſilvery, and very like thoſe of the Sea Purſlane. Theſe continue moſt of the year; the flowers are very ſmall, and have not been ſucceeded by fruit yet in England. I can give no farther account of its difference from the other ſorts.

The fifth ſort is very common in the nurſeries about London, and is uſually ſold with other flowering ſhrubs to adorn gardens: this ſeldom riſes more than three feet high, ſending out many ſide branches. The roots of this are very ſubject to put out ſuckers, by which it may be increaſed in plenty, but if theſe are not annually taken away, they will ſtarve the old plants. As theſe ſuckers are very apt to creep at the root, and put out ſuckers again, thoſe plants which are propagated by layers are much preferable. This ſhrub flowers in April, at which time all the young ſhoots are covered with flowers, which are of a Peach bloſſom, and make a fine appearance when intermixed with ſhrubs of the ſame growth.

The common Almond is cultivated in all the nurſeries, and the trees are generally planted for the beauty of their flowers. Theſe often appear in February, when the ſpring is forward, but if froſt comes after, the flowers are ſoon deſtroyed, ſo that their beauty is of ſhort duration, and in ſuch ſeaſons there are few of the Almonds which bear fruit; whereas, when the trees do not flower till March, they ſeldom fail to bear plenty of fruit, many of which will be very ſweet, and fit for the table when green, but they will not keep long.

They are propagated by inoculating a bud of theſe trees into a Plumb, Almond, or Peach ſtock, in the month of July (the manner of this operation ſee under the article of Inoculation). The next ſpring, when the buds ſhoot, you may train them up either for ſtandards, or ſuffer them to grow for half ſtandards, according to your own fancy; though the uſual method is to bud them to the height the ſtems are intended to be; and the ſecond year after budding, they may be removed to the places where they are to remain. The beſt ſeaſon for tranſplanting theſe trees, if for dry ground, is in October, as ſoon as the leaves begin to decay; but for a wet ſoil, February is much preferable, and obſerve always to bud upon Plumb ſtocks for wet ground, and Almonds and Peaches for dry.

ALMOND, the Dwarf, with double flowers. See Persica.

AMYRIS. See Toxicodendron.

ANACAMPSEROS. See Sedum.

ANACARDIUM. Lin. Gen. Plant. 467. Acajou. Tourn. Inſt. R. H. 658. tab. 435. The Caſhew-nut, or Acajou.

The Characters are,

It hath an empalement of one leaf, which is erect, and cut into five acute ſegments at the brim. The flower is of one leaf, having a ſhort tube, cut into five parts at the top, which are reflexed, and are longer than the empalement; the flower hath ten ſlender ſtamina, which are as long as the petal, crowned with ſmall ſummits. In the center is placed a round germen, ſupporting an awl-ſhaped ſtyle, crowned with an acute ſtigma. The germen afterward becomes a large, oval, fleſhy fruit, having a large kidney-ſhaped nut growing to its apex.

This genus of plants is by Dr. Linnæus ranged in the firſt ſection of his tenth claſs, entitled Decandria Monogynia; the flowers of this having ten ſtamina and a ſingle ſtyle.

We have but one Species of this genus, viz.

Anacardium (*Occidentale*) Hort. Cliff. 161. *the occidental Anacardium, or Caſhew.* Acajou. Piſ. Hiſt. Braſ. 58.

This tree grows to the height of twenty feet or more, in its native country, which is both Indies, but in England the plants are with great difficulty preſerved; though by their firſt ſhoot from the ſeeds, they appear ſo ſtrong and vigorous, as to promiſe a much greater progreſs than they are ever ſeen to make.

They are eaſily raiſed from the nuts, which are annually brought from America in great plenty; each of theſe ſhould be planted in a ſmall pot filled with light ſandy earth, and plunged into a good hot-bed of tanners bark, being careful to prevent their having wet, till the plants come up, for the nuts frequently rot with moiſture. The reaſon of my adviſing the nuts to be each put into a ſeparate pot, is, becauſe the plants ſeldom live when they are tranſplanted. If the nuts are freſh, the plants will come up in about a month after planting, and in two months more they will be four four or five inches high, with large leaves; from this quick growth, many perſons have been deceived by ſuppoſing them hardy, and that they would continue the like progreſs, whereas they ſeldom advance much farther the ſame year.

The plants muſt be conſtantly kept in the ſtove, for they are too tender to live abroad in England, in the warmeſt ſeaſon of the year, nor will they thrive in a common green-houſe in ſummer. As theſe plants abound with a milky acrid juice, they ſhould have but little water, even in ſummer; and in winter, if they are ſparingly watered once in a fortnight, it will be ſufficient, for their roots are tender and ſoon periſh with moiſture.

When theſe plants are tranſplanted, it will be the beſt method to break the pots, for the roots do not put out many fibres to hold the earth about them, ſo that in ſhaking them out of the pots, moſt of the earth

will fall away from their roots, and when this happens, the plants ſeldom ſurvive it; therefore in breaking of the pots, the ſame caution muſt be had not to diſturb the earth more than can be avoided; then the plant, with the ball of earth to its roots, ſhould be put into a pot one ſize larger than that in which it had before grown, filling up the pot with light ſandy earth, and plunge the pots again into the hot-bed. Theſe plants ſhould not be removed oftener than once a year, nor ſhould they be put into large pots, for unleſs their roots are confined, they will not thrive.

With this management I have kept theſe plants ſeveral years, but they are of ſlow growth after the firſt ſeaſon, ſo that I have not raiſed any of them more than two feet and a half high, and it is very rare to ſee them in England more than half that height, though I have ſeen two of them in flower, one in the late Sir Charles Wager's garden at Parſons-green, and the other in Chelſea garden.

The pulpy fruit, to whoſe apex this nut grows, is as large as an Orange, and is full of an acid juice, which is frequently mixed in the making of punch in America. Many of theſe fruit have been brought to England, in caſks of rum for the ſame purpoſe.

The nut is of the ſize and ſhape of a hare's kidney, but is much larger at the end which is next the fruit, than at the other. The outer ſhell is of an Aſh colour, and very ſmooth; under this is another which covers the kernel, between theſe there is a thick black inflammable oil, which is very cauſtic; this will raiſe bliſters on the ſkin, and has often been very troubleſome to thoſe who have incautiouſly put the nuts into their mouths to break the ſhell.

The milky juice of this tree will ſtain linen of a deep black, which cannot be waſhed out again; but whether this has the ſame property with that of the eaſtern Anacardium, has not yet been fully experimented; for the inſpiſſated juice of that tree is the beſt ſort of lac, which is uſed for ſtaining of black in China and Japan.

Dr. Grew mentions the juice being uſed for ſtaining of cottons, but it is doubtful which of the ſpecies he means; though Sir Hans Sloane ſuppoſes it to be of the Acajou here mentioned. However, it may be very well worth the trial; if the inhabitants of the Britiſh iſlands in America would tap a few of the trees in the bleeding ſeaſon, and collect the juice in earthen pots, keeping it in a place free from duſt, or covering the pots over with a linen cloth, to prevent duſt from mixing with it, and when it is of a proper conſiſtence, ſome trials may be made with it, to ſee if it has the ſame property with the Japan lac, which if it has, may prove a valuable commodity.

ANACYCLUS. Lin. Gen. Plant. 869. Santolinoides. Vall. Acad. Scien.

The CHARACTERS are,

It hath compound flowers, conſiſting of female and hermaphrodite florets, included in one common ſcaly empalement; the rays or borders being formed of the female florets, which are tubulous, and ſtretched out in the form of a tongue beyond the empalement. The hermaphrodite florets which compoſe the diſk, are funnel-ſhaped, quinqueſid, and ſpread open; theſe have each five ſlender ſtamina, which are crowned with cylindrical ſummits; in the center is placed an oblong compreſſed germen, ſupporting a ſlender ſtyle, crowned with biſid ſtigma. The female florets have an oblong membraneous germen, ſupporting a ſlender ſtyle, crowned with two ſlender reflexed ſtigma; the hermaphrodite florets are ſucceeded by one oblong compreſſed ſeed. The female florets are ſucceeded by a ſingle oblong ſeed with broad borders or wings, which are indented at the top; theſe are placed on a convex receptacle.

This genus of plants is ranged by Dr. Linnæus in the third ſection of his nineteenth claſs, entitled Syngeneſia Polygamia ſuperflua. The plants of this diviſion have female and hermaphrodite flowers included in the ſame common empalement.

The SPECIES are,

1. ANACYCLUS (*Creticus*) foliis decompoſitis linearibus laciniis diviſis planis. Hort. Cliff. 417. *Anacyclus with narrow decompounded leaves, whoſe diviſions are plain.* Cotula cretica minima chamæmeli folio capite inflexo. Tourn. Cor. 37.
2. ANACYCLUS (*Orientalis*) foliis compoſitis ſetaceis acutis rectis. Hort. Cliff. 417. *Anacyclus with compound, briſtly, upright, pointed leaves.* Chamæmelum Orientale foliis pinnatis. Tourn. Cor. 37.
3. ANACYCLUS (*Valentinus*) foliis decompoſitis linearibus laciniis diviſis tretiuſculis acutis floribus floſculoſis. Hort. Cliff. 417. *Anacyclus with decompounded narrow leaves, whoſe diviſions are taper and pointed, and floſcular flowers.* Chryſanthemum Valentinum. Cluſ. Hiſt. 1. p. 332.

The two firſt ſorts grow naturally in the iſlands of the Archipelago, from whence Dr. Tournefort ſent their ſeeds to the royal garden at Paris. I have alſo received the ſeeds of both theſe plants from Portugal, ſo that it may alſo grow naturally there, as do many of thoſe plants which were diſcovered by Tournefort in the Levant. Theſe are low plants, whoſe branches trail on the ground. The firſt ſort has fine cut leaves like thoſe of Chamomile; the flowers are ſmall, white, and grow ſingle, with their heads declining; theſe are like thoſe of the common Mayweed. The ſecond hath winged leaves like thoſe of the Ox-eye; the flowers are white, and like thoſe of Chamomile.

The third ſort grows naturally in Spain, from whence I have received the ſeeds. This grows a foot and half high, ſending out many ſide branches; the leaves are finely divided like thoſe of Chamomile, and are hairy: the flowers grow ſingle at the extremity of the branches, and are of a bright yellow colour, with a ſilvery ſcaly empalement. Theſe are as large as thoſe of the Ox-eye.

All theſe plants are annual: the ſeeds ſhould be ſown early in the ſpring in a border of light earth, where they are deſigned to remain, and require no other care but to keep them clean from weeds, and thin the plants where they are too cloſe. As theſe have no great beauty, a few plants only may be left for the ſake of variety. They flower in July and Auguſt, and their ſeeds ripen in September.

ANAGALLIS. Lin. Sp. Plant. 189. Pimpernel.

The CHARACTERS are,

The empalement is permanent, cut into five ſharp ſegments, which are hollow. The flower is of one leaf ſpread open, and cut into five parts at the brim; it hath five erect ſtamina which are ſhorter than the petals, and are crowned with ſingle ſummits. In the center is placed the globular germen, ſupporting a ſlender inclining ſtyle crowned with a blunt ſtigma. The germen afterward becomes a globular veſſel with one cell, opening horizontally, in which are lodged ſeveral angular ſeeds.

This genus of plants is by Dr. Linnæus ranged in the firſt diviſion of his fifth claſs, entitled Pentandria Monogynia, the flowers having five ſtamina and one ſtyle.

The SPECIES are,

1. ANAGALLIS (*Arvenſis*) foliis indiviſis caule procumbente. Lin. Gen. Plant. 148. *Pimpernel with undivided leaves and a trailing ſtalk.* Anagallis Phœnicio flore. C. B. P. 252.
2. ANAGALLIS (*Fœmina*) foliis indiviſis glaucis caule procumbente flore cæruleo. *Pimpernel with undivided glaucous leaves, a trailing ſtalk, and blue flower.* Anagallis cæruleo flore. C. B. P. 252.
3. ANAGALLIS (*Monelli*) foliis indiviſis caule erecto. Lin. Sp. Plant. 148. *Pimpernel with an undivided leaf and upright ſtalk.* Anagallis tenuifolia Monelli. Cluſ. App.
4. ANAGALLIS (*Latifolia*) foliis cordatis amplexicaulibus, caulibus compreſſis. Lin. Sp. Plant. 149. *Pimpernel with heart-ſhaped leaves, embracing the ſtalks which are compreſſed.* Anagallis Hiſpanica latifolio flore cæruleo. Horteg.

The firſt ſort is very common in fields, and other cultivated places, in moſt parts of England. The ſecond ſort is ſometimes found wild in the fields, but is leſs common than the firſt in England. This is ſuppoſed to be only a variety of the firſt, but from

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thirty years cultivating it, I can affirm it never alters; and the plants before they ſhew their flowers are ſo different, as to be eaſily diſtinguiſhed from the firſt. There is a variety of this with a deeper blue flower, whoſe ſeeds I received from Nice, and this hath retained its colour for three years, during which time I have ſown it in the Chelſea garden.

Theſe are all annual plants which ariſe from ſeeds, and, if ſuffered to remain till their ſeeds ſcatter, will become weeds in the place; ſo that they are never cultivated, except in botanic gardens for variety. The firſt and ſecond ſorts are directed by the College of Phyſicians for medicinal uſe.

The third ſort is a very beautiful, ſmall, perennial plant, producing great numbers of fine blue flowers, in April and May: this may be propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept till ſpring, they do not always ſucceed: this plant requires to be ſheltered from extreme cold, which will ſometimes deſtroy it in winter.

The fourth ſort was ſent me from Spain by Mr. Hortega, intendant of the royal gardens at Madrid. This is a trailing annual plant, with broad leaves and blue flowers. It will eaſily riſe from ſeeds, and requires no other care but to keep the plants clean from weeds.

There are two varieties of the firſt ſort, one with a white, and the other a fleſh-coloured flower; but as they are not conſtant, I have not inſerted them as different ſpecies. There is alſo another with a worn-out purple flower, which has ſeveral years continued the ſame in the Chelſea garden; but as there is little difference in the leaves of this and the firſt, I have not enumerated it.

ANAGYRIS, Stinking Bean-trefoil.

The CHARACTERS are,

It hath a bell-ſhaped empalement, which is cut into five parts at the brim, the upper ſegment being much deeper cut than the others. The flower is of the butterfly kind, the ſtandard is heart-ſhaped, upright, broad, and indented. This is much longer than the empalement; the wings are oblong, plain, and longer than the ſtandard; the keel is long and upright: it hath ten ſtamina, which riſe diſtinct, and are equal, crowned with ſingle ſummits. In the center is placed an oblong germen, ſupporting a ſingle ſtyle, having a hairy ſtigma. The germen afterward becomes a large oblong pod, which is reflexed at the point, in which is lodged ſeveral kidney-ſhaped ſeeds.

Dr. Linnæus ranges this genus in his tenth claſs of plants, entitled Decandria Monogynia, the flower having ten ſtamina, and one ſtyle.

The SPECIES are,

1. ANAGYRIS (*Fœtida*) foliis ovatis floribus lateralibus. *Stinking Bean-trefoil with oval leaves, and flowers proceeding from the wings of the ſtalks.* Anagyris fœtida. C. B. P. 391.
2. ANAGYRIS (*Cretica*) foliis oblongis racemis longioribus. *Stinking Bean-trefoil with oblong leaves, and longer ſpikes of flowers.* Anagyris fœtida Cretica oblongis foliis luteis floribus. Barrel. Icon.

The firſt ſort grows wild in the ſouth of France, in Spain and Italy: this is a ſhrub which uſually riſes to the height of eight or ten feet, and produces its flowers in April and May, which are of a bright yellow colour, growing in ſpikes, ſomewhat like thoſe of the Laburnum: the ſeeds are never perfected in this country, which is the reaſon of its preſent ſcarcity in England.

The other ſort is a native of Candia, and ſome of the iſlands of the Archipelago, and at preſent very rare in the Engliſh gardens. This ſort hath longer leaves than the former, and flowers later in the ſummer, ſo that it never produces ſeeds.

Theſe may be both propagated by laying down their tender branches in the ſpring, obſerving to tongue them in the ſame manner as the layers of Carnations, being careful in dry weather to ſupply them with water; which if duly performed, the layers will have taken root by the following ſpring, when they ſhould be cut off from the old plants, a little time before they begin to put out their leaves, and planted in a warm ſituation; for if they are too much expoſed to cold winds, they will be in danger of being deſtroyed in a hard winter. This method of propagating theſe plants, is to ſupply their defect in not producing ripe ſeeds in this country; for the plants which are produced from ſeeds, will be much handſomer, and will riſe to a much greater height.

If you propagate theſe plants from ſeeds, you ſhould ſow them on a moderate hot-bed the beginning of March. If the ſeeds are good, the plants will appear in a month after the ſeeds are ſown; when they ſhould be inured by degrees to the open air, into which they ſhould be removed toward the end of May, placing them in a ſheltered ſituation; for this purpoſe the ſeeds ſhould be ſowed in pots, and plunged into a hot-bed, becauſe the plants do not bear tranſplanting well till the ſpring following: and as they are impatient of cold while young, ſo the two firſt winters it will be proper to ſhelter them under a common frame, where the glaſſes may be drawn off every day in mild weather, that the plants may enjoy the open air, which will prepare them for planting abroad when they have acquired proper ſtrength: it will be very proper to keep theſe plants in pots three years, in which time they will have advanced to be in proper condition for planting them into the places where they are intended to remain; the beſt time for this is about the beginning of April, juſt before the plants begin to put out new leaves: at which time they ſhould be turned out of the pots, preſerving good balls of earth to their roots, planting ſome of them againſt warm aſpected walls, where they will not be in danger of ſuffering by froſt; and the others may be planted in warm ſituations, where, if they are protected in ſevere winters, by covering the ſurface of the ground about their roots with tanners bark, and ſcreening their heads with mats, they may be preſerved ſeveral years. The fourth year from ſeeds theſe plants will begin to produce their flowers, and will continue flowering every year after, ſo will be very proper to intermix with other flowering ſhrubs of the ſame growth in warm ſituations.

ANANAS, the Pine-apple.

The CHARACTERS are,

The flower conſiſts of three oval petals, which are produced from the protuberances of the pyramidal fruit, and are ſtretched out beyond the empalement. Theſe have ſix awl-ſhaped ſtamina, which ſtand within the flower, crowned with ſpear-ſhaped ſummits: the germen is ſituated below the flower, ſupporting a ſlender ſtyle, crowned with a trifid ſtigma. The germen afterward becomes a cell, in which is lodged ſeveral angular ſeeds.

Dr. Linnæus has joined this to the Bromelia of father Plumier, to which he has alſo added the Karatas of the ſame author, ſuppoſing them to be of the ſame genus; which miſtake he may have been led into by Plumier's figures, for he has joined the fruit of the Caraguata to the flowers of the Karatas, and *vice verſa*. The other differences will be exhibited under the article Karatas.

The VARIETIES of this are,

1. ANANAS (*Ovatus*) aculeatus, fructu ovato, carne albida. Plum. *Oval-ſhaped Pine-apple, with a whitiſh fleſh.*
2. ANANAS (*Pyramidalis*) aculeatus, fructu pyramidato, carne aurea. Plum. *Pyramidal Pine-apple, with a yellowiſh fleſh, called the Sugar-loaf Pine.*
3. ANANAS (*Glabra*) folio vix ſerrato. Boerh. Ind. Alt. 2. 83. *Pine-apple with ſmooth leaves.*
4. ANANAS (*Lucidus*) lucide virens, folio vix ſerrato. Hort. Elth. *Pine-apple with ſhining green leaves, and ſcarce any ſpines on their edges.*
5. ANANAS (*Serotinus*) fructu pyramidato olivæ colore, intus aureo. *Pyramidal Olive-coloured Pine-apple, with a yellow fleſh.*
6. ANANAS (*Viridis*) aculeatus, fructu pyramidato ex viridi flaveſcente. *The green Pine-apple.*

There are ſeveral other varieties of this fruit, ſome of which may have been obtained from ſeeds; and I doubt

doubt not but if the ſeeds were ſown frequently, in the countries where they are in plenty, there may be as great variety of theſe fruit, as there are of Apples or Pears in Europe. And this I have found true by ſome trials which I have made by ſowing the ſeeds, which have always produced a variety of ſorts from thoſe of the ſame fruit.

This fruit (which is juſtly eſteemed for the richneſs of its flavour, as it ſurpaſſes all the known fruits in the world), is produced from an herbaceous plant, which hath leaves ſomewhat reſembling thoſe of Aloe, and are, for the moſt part, ſawed on their edges, but are much thinner, and not ſo juicy as the Aloe: the fruit reſembles the cones of the Pine-tree, from whence it is ſuppoſed to have its name.

Where this plant is a native, I believe is hard to determine; but it is probably an indigenous plant in Africa, where, I have been informed, they grow in uncultivated places in great plenty. They have been long cultivated in the hotteſt iſlands of the Weſt-Indies, where they are in great plenty, and extraordinary goodneſs; but they have not been many years in the European gardens, ſo as to produce fruit: the firſt perſon who ſucceeded in this affair, was Monſieur Le Cour of Leyden in Holland, who, after a great many trials, with little or no ſucceſs, did at length hit upon a proper degree of heat and management, ſo as to produce fruit equally good (though not ſo large) as thoſe which are produced in the Weſt-Indies, as hath been often affirmed by perſons who have lived many years there: and it is to this worthy cultivator of gardening, who did not ſpare any pains or expence to accompliſh it, that all the lovers thereof are obliged, for introducing this king of fruits amongſt them; and it was from him that our gardens in England were firſt ſupplied, though we have ſince had large quantities brought from America. I cannot here avoid taking notice of a common error which prevails amongſt many people, which is, that the plants brought from America are not ſo good as thoſe which came from M. Le Cour; which is a great miſtake, for were the people who ſend over theſe plants from America careful to ſend the beſt kinds, there would be found many better than thoſe cultivated by M. Le Cour, who had his from thence at firſt, as his gardener aſſured me; and I have ſeen as good fruit produced from American plants, as any I have yet ſeen, and ſome three times larger than any I ſaw in M. Le Cour's garden.

The firſt ſort is the moſt common in Europe; but the ſecond ſort is much preferable to it, the fruit of this being larger, and much better flavoured: the juice of this ſort is not ſo aſtringent as that of the firſt, ſo that this fruit may be eaten in greater quantity with leſs danger. This frequently produces ſuckers immediately under the fruit, whereby it may be increaſed much faſter than the common ſort; ſo that in a few years, it may be the moſt common ſort in England.

The third ſort is preſerved by ſome curious perſons for the ſake of variety, but the fruit is not worth any thing. The ſixth ſort is at preſent the moſt rare in Europe, there being very few of the plants at preſent. This has been eſteemed the beſt ſort known, by ſome of the moſt curious perſons in America, many of whom have thrown out all the other ſorts from their gardens, and cultivate only this kind. The plants of this ſort may be procured from Barbadoes and Montſerrat, in both which places it is cultivated.

The ſort with very ſmooth graſs-green leaves, was raiſed from ſeeds taken out of a rotten fruit, which came from the Weſt-Indies to the late Henry Heathcote, Eſq; from whom I received one plant, which hath produced large fruit: this, I am told, is what the people of America call the King Pine. I have ſince raiſed ſome plants of this kind from ſeeds, which were brought me from Jamaica.

Theſe plants are propagated by planting the crowns which grow on the fruit, or the ſuckers which are produced either from the ſides of the plants, or under

the fruit, both which I have found to be equally good; although by ſome perſons the crown is thought preferable to the ſuckers, as ſuppoſing it will produce fruit ſooner than the ſuckers, which is certainly a miſtake; for by conſtant experience I find the ſuckers (if equally ſtrong) will fruit as ſoon, and produce as large fruit as the crowns.

The ſuckers and crowns muſt be laid to dry in a warm place for four or five days, or more (according to the moiſture of the part which adhered to the old fruit;) for if they are immediately planted, they will rot, eſpecially the crowns. The certain rule of judging when they are fit to plant, is by obſerving if the bottom is healed over and become hard; for if the ſuckers are drawn off carefully from the old plants, they will have a hard ſkin over the lower part, ſo need not lie ſo long as the crowns, or thoſe whoſe bottoms are moiſt. But whenever a crown is taken from the fruit, or the ſuckers from old plants, they ſhould be immediately diveſted of their bottom leaves, ſo high as to allow depth for their planting; ſo that they may be thoroughly dry and healed in every part, leſt when they receive heat and moiſture, they ſhould periſh, which often happens when this method is not obſerved. If theſe ſuckers or crowns are taken off late in the autumn, or during the winter, or early in the ſpring, they ſhould be laid in a dry place in the ſtove, for a fortnight or three weeks before they are planted, but in the ſummer ſeaſon they will be fit for planting in a few days.

As to the earth in which theſe ſhould be planted, if you have a rich good kitchen-garden mould, not too heavy, ſo as to detain the moiſture too long, nor over light and ſandy, it will be very proper for them without any mixture: but where this is wanting, you ſhould procure ſome freſh earth from a good paſture; which ſhould be mixed with about a third part of rotten neats dung, or the dung of an old Melon or Cucumber-bed, which is well conſumed. Theſe ſhould be mixed ſix or eight months at leaſt before they are uſed, but if it be a year, it will be the better; and ſhould be often turned, that their parts may be the better united, as alſo the clods well broken. This earth ſhould not be ſcreened very fine, for if you only clear it of the great ſtones, it will be better for the plants than when it is made too fine. You ſhould always avoid mixing any ſand with the earth, unleſs it be extremely ſtiff, and then it will be neceſſary to have it mixed at leaſt ſix months or a year before it is uſed; and it muſt be frequently turned, that the ſand may be incorporated in the earth, ſo as to divide its parts: but you ſhould not put more than a ſixth part of ſand, for too much ſand is very injurious to theſe plants.

In the ſummer ſeaſon, when the weather is warm, theſe plants muſt be frequently watered, but you ſhould not give them large quantities at a time: you muſt alſo be very careful, that the moiſture is not detained in the pots, by the holes being ſtopped, for that will ſoon deſtroy the plants. In very warm weather they ſhould be watered twice or three times a week; but in a cool ſeaſon, once a week will be often enough: and during the ſummer ſeaſon, you ſhould once a week water them gently all over their leaves, which will waſh the filth from off them, and thereby greatly promote the growth of the plants.

There are ſome perſons who frequently ſhift theſe plants from pot to pot, but this is by no means to be practiſed by thoſe who propoſe to have large well flavoured fruit; for unleſs the pots be filled with the roots, by the time the plants begin to ſhew their fruit, they commonly produce ſmall fruit, which have generally large crowns on them, therefore the plants will not require to be potted oftener than twice in a ſeaſon: the firſt time ſhould be about the end of April, when the ſuckers and crowns of the former year's fruit (which remained all the winter in thoſe pots in which they were firſt planted) ſhould be ſhifted into larger pots, i. e. thoſe which were in halfpenny, or three-farthing pots, ſhould be put into penny, or

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at moſt three-halfpenny pots, according to the ſize of the plants; for you muſt be very careful not to over-pot them, nothing being more prejudicial to theſe plants. The ſecond time for ſhifting of them is in the beginning of Auguſt, when you ſhould ſhift thoſe plants which are of a proper ſize for fruiting the following ſpring, into two-penny pots, which are full large enough for any of theſe plants. At each of theſe times of ſhifting the plants, the bark-bed ſhould be ſtirred up, and ſome new bark added, to raiſe the bed up to the height it was at firſt made; and when the pots are plunged again into the bark-bed, the plants ſhould be watered gently all over their leaves, to waſh off the filth, and to ſettle the earth to the roots of the plants. If the bark-bed be well ſtirred, and a quantity of good freſh bark added to the bed, at this latter ſhifting, it will be of great ſervice to the plants; and they may remain in the ſame tan until the beginning of November, or ſometimes later, according to the mildneſs of the ſeaſon, and will require but little fire before that time. During the winter ſeaſon theſe plants will not require to be watered oftener than once a week, according as you find the earth in the pots to dry: nor ſhould you give them too much at each time, for it is much better to give them a little water often, than to over-water them, eſpecially at this ſeaſon.

You muſt obſerve never to ſhift thoſe plants which ſhew their fruit, into other pots; for if they are removed after the fruit appears, it will ſtop their growth, and thereby cauſe the fruit to be ſmaller, and retard its ripening, ſo that many times it will be October or November before the fruit is ripe; therefore you ſhould be very careful to keep the plants in a vigorous growing ſtate, from the firſt appearance of the fruit, becauſe upon this depends the goodneſs and ſize of the fruit; for if they receive a check after this, the fruit is generally ſmall and ill taſted.

When you have cut off the fruit from the plants, whoſe kind you are deſirous to propagate, you ſhould trim the leaves, and plunge the pots into a moderate hot-bed, obſerving to refreſh them frequently with water, which will cauſe them to put out ſuckers in plenty; ſo that a perſon may be ſoon ſupplied with plants enough of any of the kinds, who will but obſerve to keep the plants in health.

There is not any thing which can happen to theſe plants of a more dangerous nature, than to have them attacked by ſmall white inſects, which appear at firſt like a white mildew, but ſoon after have the appearance of lice: theſe attack both root and leaves at the ſame time, and if they are not ſoon deſtroyed, will ſpread over a whole ſtove in a ſhort time; and in a few weeks will entirely ſtop the growth of the plants, by ſucking out the nutritious juice, ſo that the leaves will appear yellow and ſickly, and have generally a great number of yellow tranſparent ſpots all over them. Theſe inſects, after they are fully grown, appear like bugs, and adhere ſo cloſely to the leaves, as not to be eaſily waſhed off, and ſeem as if they had no life in them. They were originally brought from America upon the plants which were imported from thence, and I believe they are the ſame inſects which have deſtroyed the ſugar canes of late years in ſome of the Leeward iſlands. Since they have been in England, they have ſpread greatly in ſuch ſtoves, where there has not been more than ordinary care taken to deſtroy them. They have alſo attacked the Orange-trees in many gardens near London, and have done them incredible damage; but I do not find they will endure the cold of our climate in winter, ſo that they are never found on ſuch plants as live in the open air. The only method I have been yet able to diſcover for deſtroying theſe inſects, is by waſhing the leaves, branches, and ſtems, of ſuch plants as they attack, frequently with water, in which there has been a ſtrong infuſion of Tobacco-ſtalks, which I find will deſtroy the inſects, and not prejudice the plants. But this method cannot be practiſed on the Ananas plants, becauſe the inſects will faſten themſelves ſo low between the leaves, that it is impoſſible to come at them with a ſponge to waſh them off; ſo that if all thoſe which appear to ſight are cleared off, they will ſoon be ſucceeded by a freſh ſupply from below, and the roots will be alſo equally infeſted with them. Therefore, wherever theſe inſects appear on the plants, the ſafeſt method will be, to take the plants out of the pots, and clear the earth from the roots; then prepare a large tub, which ſhould be filled with water, in which there has been a ſtrong infuſion of Tobacco-ſtalks; into this tub you ſhould put the plants, placing ſome ſticks acroſs the tub, to keep the plants immerſed in water. In this water they ſhould remain twenty-four hours; then take them out, and with a ſponge waſh off all the inſects from the leaves and roots, which may be eaſily effected when the inſects are killed by the infuſion; then cut off all the ſmall fibres of the roots, and dip the plants into a tub of fair water, waſhing them therein, which is the moſt effectual way to clear them from the inſects. Then you ſhould pot them in freſh earth, and having ſtirred up the bark-bed, and added ſome new tan to give a freſh heat to the bed, the pots ſhould be plunged again, obſerving to water them all over the leaves (as was before directed) and this ſhould be repeated once a week during the ſummer ſeaſon; for I obſerve theſe inſects always multiply much faſter where the plants are kept dry, than in ſuch places where the plants are ſometimes ſprinkled over with water, and kept in a growing ſtate. And the ſame is alſo obſerved in America, for it is in long droughts that the inſects make ſuch deſtruction in the ſugar canes. And in thoſe iſlands where they have had ſeveral very dry ſeaſons of late, they have increaſed to ſuch a degree, as to deſtroy the greateſt part of the canes in the iſlands, rendering them not only unfit for ſugar, but poiſon the juice of the plant, ſo as to diſqualify it for making rum, whereby many planters have been ruined.

As theſe inſects are frequently brought over from America on the Ananas plants which come from thence, thoſe perſons who procure their plants from thence, ſhould look carefully over them when they receive them, to ſee they have none of theſe inſects on them; for if they have, they will ſoon be propagated over all the plants in the ſtove where theſe are placed: therefore, whenever they are obſerved, the plants ſhould be ſoaked (as was before directed) before they are planted into pots.

It was formerly the common practice of thoſe perſons, who cultivated this fruit in Europe, to build dry ſtoves, in which they kept their plants in winter, placing the pots on ſcaffolds (after the manner in which Orange-trees are placed in a green-houſe), and in the ſummer to place them in hot-beds of tanners bark under frames. This was the method practiſed in Holland for raiſing this fruit, which by Monſieur Le Cour's gardener was firſt taught thoſe perſons, whom his maſter was ſo kind as to ſend the plants. But as the culture of theſe plants have ſince become general in England, there has been great improvements made, not only in the contrivances of the ſtoves, but alſo in the culture of the plants. For by the former method, the plants were kept upon ſhelves at leaſt four or five months, whereby the extreme fibres of their roots became dry and hard; for if the plants were too often watered, it occaſioned their rotting; ſo that during the winter ſeaſon, when the plants ſhould be preparing their fruit for the next ſummer, they were at a ſtand, making little or no progreſs, whereby the fruit did not appear early enough in the ſpring to ripen in ſummer, nor were the fruit ſo large.

Therefore, to remedy this inconvenience, it is now the practice of thoſe perſons who are deſirous to propagate the fruit, to erect low ſtoves, with pits therein for the hot-bed, in the manner hereafter deſcribed and figured; theſe are built in different ways, according to the fancy of the contriver. Some perſons build them with upright glaſſes in front, about four feet high,

high, ſo that there is juſt height enough for perſons to walk upright on the back-ſide of the bark-bed. Others make but one ſlope of glaſſes, from the top of the ſtove down to the plate, which lies about ſix or eight inches above the bark-pit, ſo that in the front of this ſtove, there is no walk made between the bark-pit and the glaſſes; but the inconveniency of watering the plants, as alſo of coming near thoſe plants which are placed in the front of the ſtove to clean them, has, in ſome meaſure, brought them into diſeſteem, ſo that few perſons now build them, tho' the expence is much leſs than of the other kind of ſtoves; but of both theſe ſtoves the figures and deſcriptions which are hereafter exhibited under the article of ſtove, will be ſufficient for any perſon to build either of the ſorts. One of theſe ſtoves about thirty-five feet long in the clear, with the pit or the tan reaching from end to end, and ſix feet and a half wide, will contain about fourſcoure fruiting plants; ſo that whoever is deſirous to have this fruit, may eaſily proportion their ſtove to the quantity of fruit which they are willing to have.

But it will be alſo neceſſary to have a bark-pit under a deep frame, in order to raiſe the young plants; in which you ſhould plunge the ſuckers, when they are taken from the old plants, as alſo the crowns which come from the fruit, ſo that this frame will be as a nurſery to raiſe the young plants to ſupply the ſtove: but theſe plants ſhould not remain in theſe frames longer than till the beginning of November, unleſs the frame is built with brick-work with flues in it to warm the air (in the manner hereafter deſcribed and figured), which are very uſeful, as nurſeries, to keep the young plants till they are of a proper ſize to produce fruit; ſo that you may keep theſe either warmer or cooler than the ſtove, according as the plants may require, ſo that the ſtove may be every autumn filled only with bearing plants, whereby a much greater quantity of fruit may be annually produced, than can be where young and old plants muſt be crowded into the ſame ſtove. But where there are no conveniences of this kind, the young plants, about the middle or latter end of October, muſt be removed into the ſtove, and being ſmall, may be crowded in among the larger plants; for as they will not grow much during the winter ſeaſon, they may be placed very cloſe together.

The beginning of March, where there is no nurſery for the young plants, they muſt be removed out into the hot-bed again, which ſhould be prepared a fortnight before, that the tan may have acquired a proper heat: but you ſhould be careful that the tan be not too hot, for that might ſcald the fibres of the plants, if they are ſuddenly plunged therein. Therefore if you find the bark too hot, you ſhould not plunge the pots above two or three inches into the tan, letting them remain ſo until the heat of the tan is a little abated, when you ſhould plunge the pots down to their rims in the bed. If the nights ſhould continue cold after theſe plants are removed into the bed, you muſt carefully cover the glaſſes with mats; otherwiſe by coming out of a warm ſtove, they may receive a ſudden check, which will greatly retard their growth, therefore muſt be carefully avoided; becauſe the ſooner the plants are ſet growing in the ſpring, the more time they will have to gain ſtrength, in order to produce large fruit the following ſeaſon.

You ſhould not plunge the pots too cloſe together in this frame, but allow them a proper diſtance, that the lower part of the plants may increaſe in bulk, for it is on this that the magnitude of the fruit depends; becauſe when the plants are placed too cloſe, they draw up very tall, but do not obtain ſtrength; ſo that when they are taken out of the bed, the leaves are not able to ſupport themſelves; but all the outward long leaves will fall down, leaving the ſmaller middle leaves naked, and this ſometimes will cauſe them to rot in the center. You muſt alſo obſerve, when the ſun is very warm, to raiſe the glaſſes of the hot-bed, in order to let out the ſteam of the bed, and to admit freſh air; for one neglect of this kind, in a very hot day, may deſtroy all the plants, or at leaſt ſo ſcald them, that they will not get over it in ſeveral months. It will be alſo very proper, in extreme hot weather, to ſhade the glaſſes in the middle of the day with mats; for the glaſſes, lying ſo near to the leaves of the plants, will occaſion a prodigious heat at ſuch times.

During the ſummer ſeaſon theſe plants muſt be frequently watered, giving them but little each time; and in hot weather, they muſt have free air admitted to them every day, from ten o'clock till four; for if they are kept too cloſe, or have too much wet, they will receive a check in their growth, when the inſects will immediately ſpread over them; for there are generally ſome of theſe inſects on all theſe plants, which do not much injury to them while they are in a growing ſtate; but whenever they are unhealthy, the inſects multiply greatly, and contribute to their decay. There are ſome perſons who regulate the heat of their ſtoves by thermometers in ſummer, but at that ſeaſon this is unneceſſary, for the outward air in hot weather is frequently greater than the Ananas heat marked on the thermometers, ſo that the heat of the ſtoves at that ſeaſon will be much greater. The uſe of the thermometer is only in the winter, during the time the fires are continued, by which it is eaſy to judge when to increaſe or diminiſh the fires; for at that ſeaſon, the ſtoves ſhould not be kept to a greater warmth than five or ſix diviſions above Ananas, nor ſuffered to be more than as many diviſions below it.

In winter the plants muſt have leſs water, but they will require to have it repeated once a week, giving them but little each time: when the plants are placed into the tan for the winter ſeaſon (which ſhould be done about the beginning of October) the tan-bed ſhould be renewed, adding two thirds of new tan, to one third of the old. If this be well mixed, and the new tan is good, the bed will maintain a proper degree of warmth till February, at which time it will be proper to ſtir up the bed, and add a load or two of new tan, ſo as to raiſe the bed as much as it ſunk ſince the autumn; this will give a freſh heat to the bed, and keep the plants growing; and as the fruit will now begin to appear, it will be abſolutely neceſſary to keep the plants in a growing ſtate, otherwiſe the fruit will not be large.

In April it will be proper to ſtir up the tan again, and if the bed has ſunk ſince the laſt ſtirring, it will be proper to add ſome freſh tan to it; this will renew the warmth of the bed, and forward the fruit. At this time it will be proper to ſhift the young plants, which are deſigned to produce fruit the following year; the tan-bed into which theſe are plunged muſt be renewed, in order to forward their growth, that they may have ſtrength enough in autumn to produce good fruit, for in this is the principal care required.

Thoſe plants which ſhew their fruit early in February, will ripen about June; ſome ſorts are at leaſt a month or five weeks longer in ripening their fruit than others, from the time of the appearance of the fruit: but the ſeaſon in which the fruit is in greateſt perfection, is from the beginning of July, to the end of September; though in March, April, and October, I have frequently eaten this fruit in pretty good perfection; but then the plants have been in perfect health, otherwiſe they ſeldom are well flavoured.

The method of judging when the fruit is ripe, is by the ſmell, and from obſervation; for as the ſeveral ſorts differ from each other in the colour of their fruit, that will not be any direction when to cut them; nor ſhould they remain ſo long as to become ſoft to the touch before they are cut, for then they become flat and dead, as they do alſo when they are cut long before they are eaten, therefore the ſureſt way to have this fruit in perfection, is to cut it the ſame day it is eaten; but it muſt be cut early in the morning, before the ſun has heated the fruit, otherwiſe it will be hot, obſerving to cut the ſtalk as long to the fruit as poſſible, and lay it in a cool, but dry place, preſerving the ſtalk and crown unto it, until it is eaten.

That ſort with green fruit, if ſuffered to ripen well, is of an Olive colour; but there are ſome perſons who cut them before they are ripe, when they are not fit to be eaten, for no other reaſon but to have them green: and although many perſons have much recommended this ſort for its excellent flavour, yet I think the Sugar-loaf ſort is much to be preferred to it.

This Sugar-loaf ſort is eaſily diſtinguiſhed from all the other, by its leaves having purple ſtripes on their inſide the whole length. The fruit is of a paler colour than the others when ripe, inclining to a ſtraw colour. This ſort was brought from Braſil to Jamaica, where it is eſteemed far beyond the other kinds.

The next in goodneſs to this, is what the inhabitants of the iſlands in America call the Montſerrat Pine; the leaves of this are of a dark brown, inclining to purple on their inſide; the protuberances of the fruit are longer and flatter than thoſe of the common ſort. I raiſed ſeveral plants of this ſort from ſeeds which I received from the iſland of St. Thomas, where this fruit is in greater perfection than in any of the Britiſh iſlands.

As ſome of the fruit produce ſeeds in England, when the greater number have no appearance of any, I doubt not whether there are not ſome with male, and others with hermaphrodite flowers; becauſe thoſe fruit which have ſeeds, are remarkably different from the others, when cut through the cells in which the ſeeds are lodged, lying nearer to the center of the fruit than the abortive cells, which are chiefly cloſe to the rind; but not having diſtinguiſhed this difference till the fruit was cut, I had no opportunity of examining their flowers.

I have continued this title of Ananas to the genus, being the moſt generally known and uſed, leſt by altering it, the practical gardeners ſhould be rather confuſed than inſtructed: and I was the rather inclined to this, as Dr. Linnæus has miſtaken the characters of the three genera, which he has joined in one. The different varieties are alſo enumerated, for the ſake of thoſe who cultivate the fruit, though they are not diſtinct ſpecies, but vary in their ſhape, colour, and flavour, the ſame as other fruits. Therefore, as this work is intended to inſtruct the practical gardener, the mentioning theſe varieties is more excuſable here, than in thoſe books which are only intended for the improvement of botany.

ANAPODOPHYLLON. See PODOPHYLLUM.

ANASTATICA, Roſe of Jericho.

The CHARACTERS are,

It hath a four leaved empalement, which falls off; the flower has four petals placed croſſwiſe, which ſpread open, whoſe tails are the length of the tube of the empalement, and ſix awl-ſhaped ſtamina, two of which are ſhorter than the other four, crowned with roundiſh ſummits, and a ſmall bifid germen, ſupporting an awl-ſhaped ſtyle the length of the ſtamina, and is permanent, crowned by a headed ſummit. The germen afterward becomes a ſhort bilocular pod, having an awl-ſhaped partition placed obliquely to the pod, and is longer.

We have but one SPECIES of this genus in the Engliſh gardens, viz.

ANASTATICA (*Hierocuntica*) foliis obtuſis, ſpicis axillaribus breviſſimis, ſiliculis ungulatis ſpinoſis. Lin. Sp. 895. *Roſe of Jericho with obtuſe leaves, ſhort ſpikes of flowers at the wings of the ſtalks, and prickly pods.*

This plant grows naturally in Paleſtine and Cairo, in ſandy places near the ſea. The ſtalks are ligneous though the plant is annual; it riſes five or ſix inches high, dividing into many irregular branches; the flowers which are ſmall and white, are diſpoſed in ſhort ſpikes at the wings of the ſtalks, and have little beauty; theſe are ſucceeded by ſhort prickly pods, having two cells, in each of which are two ſeeds.

It is preſerved in botanic gardens for the variety, and in ſome curious gardens for the oddneſs of the plant, which, if taken up before it is withered, and preſerved entire in a dry room, may be long preſerved; and after being many years kept in this ſituation, if the root is placed in a glaſs of water a few hours, the buds of flowers will ſwell, open, and appear, as if newly taken out of the ground, to the great ſurpriſe of moſt people.

The plant is annual, ſo can only be propagated by ſeeds, which rarely ripen in England, unleſs the ſeeds are ſown upon a hot-bed in the ſpring, and the plants afterward put into pots, which ſhould be plunged into another hot-bed to bring them forward; for although the ſeeds will come up in the full ground where the ſoil is dry, yet the plants rarely riſe to any ſize, nor do they perfect ſeeds unleſs the ſummer is very hot and dry: but if the plants are kept in a frame, giving them free air in warm weather, they will flower in June, and the ſeeds will ripen in September.

ANATOMY [Ἀνατομία, of Ἀνατέμνω, *Gr.* to diſſect], a diſſection.

Anatomy of plants is a cutting, dividing, or ſeparating the parts or members of plants, in order to diſcover the ſize, form, ſtructure, and uſes of their ſeveral veſſels, for the better promoting their culture.

Anatomiſts have obſerved a great ſimilitude betwixt the mechanic frame of plants and animals: the parts of plants ſeeming to bear a conſtant analogy to thoſe of animals; and the œconomy, both vegetable and animal, ſeem to be formed on the ſame model.

The parts of a plant are the root, the wood, the bark, and the pith.

1. The roots of the plants are ſpongeous bodies, whoſe parts are diſpoſed for the eaſy admittance of certain humid particles, which are prepared in the ground. The quality of the root is found much to depend upon the ſize of its veſſels and pores.

Monſieur Renaume ſuppoſes the root of a plant to do the office of all the parts in the abdomen of animals, which ſerve to nutrition, as the ſtomach, inteſtines, &c.

Dr. Boerhaave conſiders the roots of plants to be compoſed of a number of abſorbent veſſels, which are analogous to the lacteals in animals.

The root, according to Dr. Van Royen, is that part of the plant by which the nutriment is taken in, or that by which the aliment is attracted, as Theophraſtus has defined it: but it is not all that part, which is committed to the earth, to be nouriſhed by the matter which is about it, which is properly to be called the trunk of the root; this is to be referred rather to the ſtalk or ſtem, than to the root, in that it conſiſts of the ſame implicated kinds of veſſels; but that part which is by its ſurface contiguous to the exterior matrix, which, being perforated with infinite little mouths, promotes the received moiſtures, that they may be afterwards carried, by veſſels not unlike to lacteal ones, into the very body of the plant; this is properly to be called the root.

Which definition, although it may ſeem too ſtrict, is the moſt general, and applicable to all plants; for it agrees as well with them which have no root, as the vulgar opinion is, as to thoſe which have a manifeſt root; of the former kind there are but very few plants, but of the latter a great many.

As to thoſe that want a manifeſt root, the ſuperficies of them is found to be perforated on all ſides with very ſmall holes, by which they take in their nutriment, as in the Pomo Aurantio, called Neptuni, or Pila Marina by fiſhermen, and many other ſubmarine plants; and in theſe the whole ſuperficies ſerves for roots, as is plainly ſeen in ſome ſtony plants that grow under the ſea, and may be in ſome ſort proved to be deduced from the analogy of animals; for theſe being become *ſui generis*, take in aliment, not only by the mouth, but alſo the whole ſurface, expoſed to the moiſt air, ſeems to ſerve to the ſame deſign. But although theſe ſubmarine bodies have, by moſt naturaliſts, been ranged with vegetables; yet, by later diſcoveries, many of them have been found to conſiſt of beds of inſects, incloſed in ſmall cavities of theſe incruſted bodies, therefore ſhould rather be ranged with minerals.

But

But thoſe plants that are endued with a conſpicuous root, and more obvious to the ſenſes, differ among themſelves very much in this part: for ſome are bulbous, ſome are ſquamous, or tuberous, others grumous, others fibrous, and laſtly, others nodous; which, as it will be ſufficient to have taken notice of the primary differences of roots, I ſhall omit their particular definition in this place, and refer them to their ſeveral heads, where each of them ſhall be particularly deſcribed.

The firſt part of the root, which is called the Epidermis, or cuticle, is, for the moſt part, of a brown or duſky colour, very thin, and eaſily peeled off from the under ſkin (if it be firſt ſoaked in warm water); which being viewed by a microſcope, ſhews its moſt tender ſtructure much like a net pierced through with many ſmall holes. And theſe little orifices of the epidermis being dilated, and filled with the received moiſture, reſembling veſicles, which, being exhauſted yearly by the mutation of the air, become conſolidated, and periſh; to wit, this being driven out by a new cuticle growing under it, after the ſame manner as ſquammigerous animals annually caſt the old epidermis, a new cuticle coming under it; ſo that theſe little veſſels, fibrils, or by what name ſoever they are called, may not unfitly be compared to the veins of animals.

But the other part, which on the outſide conſtitutes the cortex, or outer bark, and on the inſide the liber, or inner bark, is called cutis; in which there are parts to be conſidered of a four-fold kind.

1. Certain ſtrong fibres, cohering and elaſtic, ſtretched out vertically with the lateral fibres communicating among themſelves, and compacting, or thruſting in the former, they form a hollow cylinder, or zone, under the epidermis; and this hath another under it, which alſo includes a third; and ſo of the reſt, to the moſt inward of all, which luxuriates near the wood, and is by a peculiar name called liber, or inward bark. And theſe zones, or girdles, although they are moſt innumerable, may all be peeled off as the lamellæ of bulbs, when the ſap flows through them; and inaſmuch as thoſe fibres in the harder roots of trees are almoſt of a bony nature, they procure a firmneſs to the cortex or outward bark; and theſe fibres are in all plants, and appear as well in graſs as in the Cedar tree, although they are more compact in trees, than in plants of a tenderer ſtructure, which are more eaſily ſuſtained.

2. In the areas, or ſpaces, which are between the fibres and their anaſtomoſes, there are every where membranaceous veſſels full of moiſture, or little utricles, which, in the areæ, or intercepted ſpaces that are of a different figure, are found to be various, and accommodated to all the ſpaces; but all theſe utricles communicate among themſelves, as is beſt ſeen in the greater celandine, when we ſqueeze out that golden coloured liquor with which it is filled; and the middle ſpaces betwixt theſe zones have like utricles, and all the fibres conſtitute hollow canals; but the utricles have receptacles communicating among themſelves.

3. Aereal veſſels, or tracheæ, are open from the lower to the upper part of the plant, and are twiſted or curled after an admirable manner, and diſpoſed round about with fibres and utricles in form almoſt of a ſpiral line, which in their cavities contain an elaſtic air; which being affected by the external air, firſt expanded, and afterwards condenſed, will be changed after a like manner, and feel the ſame viciſſitudes of cold and heat, and will undergo a reciprocal motion of cold and heat. This action is exerted in the veſſels filled with moiſture, which when they cannot be condenſed, give place, and are driven to thoſe that are higher, and are moved forward.

4. Laſtly, beſides fibres, utricles, and tracheæ, a peculiar kind of veſſels appear, containing the moiſtures, as it ſeems ſecreted by the organical diſpoſition of the plant itſelf, which water, or moiſten not only the cortex, but the wood, and the reſt of the parts of vegetables, and are turgid with a concocted juice, which ſeems far more elaborate than is the moiſture contained in the fibres or utricles; and the mouths of theſe veſſels being of a different figure, pour forth ſometimes a various liquor, according to its peculiar nature, chiefly near the outward region of the cortex; ſo the Tithymalus and Cichory commonly diſtil a milky humour, and the Cypreſs, Fir, and Pine, a certain ſpecies of turpentine.

And by how much theſe circles are more outward, by ſo much the middle ſpaces between the two zones are greater; and are leſſened always towards the more inward in a certain proportion, which ſeems to depend on this, viz. the outward air acting on all ſides with an equal preſſure, and by a certain power preſſes the ſecond; and this alſo by this means, is preſſed by its own condenſed air, and preſſes together thoſe which are more inward, becauſe it cannot exert its force upon the external air; therefore the ſecond circle is neceſſarily more compreſſed than the firſt, and the third more than the ſecond, and ſo of the reſt. And the utricles placed between the circles are preſſed by the ſame proportion; which, by degrees, are more and more exhauſted; thence the inner circle loſes moſt of all the compreſſed and condenſated utricles, and by degrees grows ſolid.

And this is properly called Liber (the inward bark), and is that circle, which, being middlemoſt by place and nature, between the cortex, or outward bark, and the wood, comes neareſt to the nature of the wood, and in time paſſes into it; for the cortex loſes every year one ſuch circle, and becomes wood, which may be diſtinguiſhed from the former circles of the root, ſtock, or trunk; and if they are cut horizontally, will ſhew the number of ſuch circles, and how many years the tree is old.

And this ſucceſſive mutation of the cortex into liber, and of liber into wood, is like to that we obſerve in the human body in the beginning of a callus; for a callus conſiſts of ſkin, but ſo compreſſed, that all the veſſels are loſt; and that ſkin, being become ſolid, is increaſed, and grows to a greater bulk.

But beſides theſe hitherto deſcribed, there occur certain peculiar veſſels (of which mention has been made in deſcribing the cortex), which are found full of turpentine, gum, or a certain concreted juice proper to them; the conſtant progreſs of which is not very conſpicuous in all of them, by reaſon of the tranſparency of the moiſture.

5. The fifth and laſt part is the moſt inward, the medulla or pith, diſpoſed in the middle center of the root; and as it ſeems different from the former, ſeeing this is ſometimes waſted, and that never, this appears more fungous, that more durable.

As to the manner of the root's performing its function, it may be obſerved, that the root having imbibed the ſaline and aqueous juices of the earth, and ſaturated itſelf with them, for the nouriſhment of the tree, thoſe juices are put into motion by heat; which having entered the mouths of the arterial veſſels from the root, they mount to the top with a force anſwerable to what ſets them in motion; and, by this means, they gradually open the minute veſſels rolled up, and expand them into leaves.

2. The wood; this is conſidered as conſiſting of capillary tubes, running parallel from the root throughout the ſtalk. Some call the capillary tubes arterial veſſels, becauſe the ſap riſes from the root through theſe. The aperture of theſe tubes are, for the moſt part, too minute to be perceived by the bare eye, unleſs in a piece of charcoal, cane, or the like.

Wood, ſays Dr. Grew, by microſcopical obſervations, appears to be only an aſſemblage of infinitely minute canals, or hollow fibres, ſome of which ariſe from the root upwards, and are diſpoſed in form of a circle; and the others, which are called inſertions, tend horizontally from the ſurface to the center, ſo that they croſs each other, and are interwoven like the threads of a weaver's web.

Beſides

Beſides the capillary tubes, &c. before-mentioned, there are other larger veſſels, which ſome call venal veſſels, which are diſpoſed on the outſide of the arterial veſſels, between the wood and the inner bark, and lead down to the covering of the inward root. Theſe veſſels are ſuppoſed to contain the liquid ſap found in plants in the ſpring, &c.

The Rev. Dr. Hales tells us in his excellent treatiſe on Vegetable Statics, that, in order to find whether there was any lateral communication of the ſap and ſap-veſſels, as there is of the blood in animals, by means of the ramifications and lateral communications of their veſſels; he took a young oak-branch, ſeven or eight inches diameter, at its tranſverſe cut, ſix feet high, and full of leaves; and having cut a large gap to the pith, ſeven inches from the bottom, and of an equal depth the whole length, and alſo cut another gap four inches above that on the oppoſite ſide, he ſet the end of the ſtem in water, and in two nights and two days time it imbibed and perſpired thirteen ounces; while another like oak-branch, ſomewhat bigger than that, but with no notches cut in its ſtem, imbibed twenty-five ounces.

From this and many other experiments he there mentions, he ſays, we ſee a moſt free lateral communication of the ſap and ſap-veſſels, thoſe great quantities of liquor having paſſed laterally by the gaps; in that, by ſeveral experiments on cylinders of wood, little evaporated by the gaps.

The bark is the exterior part of trees, ſerving them for a ſkin or covering: it is generally of a ſpongy texture, and communicates with the pith by a multiplicity of ſmall fibres paſſing through the capillary tubes, of which the wood conſiſts: ſo that the roots having imbibed the proper nutriment of the tree, it is carried up by the warmth of the ſun, through the fine arterial veſſel of the tree, to the top of it; and being there condenſed by the cold, it does, by its own gravity, return down by the veſſels which lie between the wood and the inner bark, which perform the office of veins; and as it paſſes by, leaves ſuch parts of its juice as the texture of the bark will receive, and requires for its ſupport.

Some are of opinion, that that ſoft whitiſh rind, or ſubſtance, which lies between the inner bark and the wood, does the office of veins: and ſome call this a third bark, and ſuppoſe it to differ from the other in nothing but having cloſer fibres, and that it contains the liquid ſap, gums, &c. which are found in the plants in the ſpring and ſummer months, which hardens by degrees, by means of the ſap it tranſmits, and is imperceptibly conveyed into the woody part of the tree.

The bark ſerves for divers purpoſes; for it not only tranſmits the nutritious juices of the plants, but alſo contains divers fat oily humours, to defend the inner parts from the injuries of the weather. As animals are furniſhed with a panniculus adipoſus, uſually replete with fat, which inveſts and covers all the fleſhy parts, and ſcreens them from external cold; ſo are plants encompaſſed with a bark, replete with fat juices, by means whereof the cold is kept out, and, in winter-time, the ſpiculæ of ice prevented from fixing and freezing the juices in their veſſels; whence it is, that ſome ſorts of trees remain ever-green throughout the year, by reaſon their barks are more compact, and contain a larger quantity of oil than can be ſpent and exhaled by the ſun.

The pith is the inward central part of a tree or plant, anſwering to the medulla, or marrow of an animal. As for its ſubſtance, it conſiſts of little tranſparent globules, chained or linked together, ſomewhat like the bubbles that compoſe the froth of liquor.

Some ſuppoſe, that the circulation of the ſap is effected by means of the pith, others by the bark, and others by the wood.

Borelli, in his book De Motu Animalium, ſuppoſes the tender growing ſhoot to be diſtended like ſoft wax, by the expanſion of the moiſture in the ſpongy pith; which dilating moiſture, he concludes, is hindered from returning back, while it expands by the ſponginеſs of the pith without the help of valves.

And the Rev. Dr. Hales is of opinion, that it is very probable, that the particles of water that immediately adhere to, and are ſtrongly imbibed into, and attracted by, every fibre of the ſpongy pith, will ſuffer ſome degree of expanſion before they can be detached by the warmth of the ſun from each attracting fibre; and, conſequently, the maſs of ſpongy fibres, of which the pith conſiſts, muſt therefore be extended.

And that the pith may be the more ſerviceable for this purpoſe, nature has provided in moſt ſhoots a ſtrong partition at every knot, which partitions ſerve not only as plinths or abutments for the dilating pith to exert its force on, but alſo to prevent the too free retreat of the rarefied ſap from the pith.

But a dilating ſpongy ſubſtance, by equally expanding itſelf every way, would not produce an oblong ſhoot, but rather a globous one, like an apple; to prevent which inconvenience it is obſervable, that nature has provided ſeveral diaphragms, beſides thoſe at each knot, which are placed at ſmall diſtances acroſs the pith, thereby preventing its too great lateral dilatation.

Theſe are very plain to be ſeen in the ſhoots of the Walnut-tree, and the ſame may be obſerved in the pith of the branches of the Sun-flower, and ſeveral other plants, where thoſe diaphragms are not to be diſtinguiſhed while the pith is full and replete with moiſture; yet when it dries up, they are often plain to be ſeen. And it is farther to be obſerved, that where the pith conſiſts of diſtinct veſicles, the fibres of thoſe veſicles are often found to run horizontally, whereby they can the better reſiſt the too great lateral relaxation of the root.

The trunk and branches of a tree, bear a reſemblance to the exterior members and limbs of an animal, which it may ſubſiſt without, though the rotting and mortification of them oftentimes occaſion a total deſtruction of it. Accordingly the like effects are found from the wounding or lopping of a tree, as from the wounding or cutting off a limb, an extravaſation, callus, or the like.

A leaf is part of a plant extended into length and breadth in ſuch a manner, as to have one ſide diſtinguiſhable from the other. The leaves, according to Malpighius, conſiſt of ſo many interwoven utricles, as to be not much unlike a pulmonary net, and ſerve inſtead of lungs to the plant. As the perſpiration and reſpiration are chiefly performed thereby, thoſe veſſels are very conſpicuous when the leaves are diſſected. In the day-time, when the heat hath rarefied the mounting juices, ſo as to become ſpecifically lighter than the air, they flow out through the pores of the leaves, and evaporate, which is the occaſion of the leaves becoming ſo flaccid in very hot weather; but in the night, when by the cold the juices are more condenſed, then the leaves are erected again, and draw in a great ſhare of nouriſhment from the air. Theſe leaves we may obſerve to be of different textures on each ſide, the upper ſurface being for the moſt part ſmooth, the better to ſhoot off the redundant moiſture, while the under ſurface is many times of a rough and cottony texture, by which it is capable of retaining the moiſture; for which reaſon we find, if by bad management, &c. the ſhoots of trees are nailed to a wall, &c. ſo as to turn the ſurfaces of the leaves the wrong ſide upwards, the ſhoots will be at a ſtand, until the leaves have obtained their proper diſpoſition. Theſe leaves, as the learned Dr. Hales obſerves, are carefully diſtributed at ſmall diſtances throughout the whole length of the ſhoots, and ſerve as ſo many jointly-acting powers, placed at different ſtations, thereby with more eaſe to draw plenty of ſap to the extending root.

A flower is the more tender part of a plant, remarkable for its colour, or form, or both, cohering with the rudiment of the fruit, and contains the organs of generation; ſome of theſe flowers contain the male organs, as the ſtamina and apices, which are loaded

with the farina fœcundans, which, when ripe, is ſcattered into thoſe flowers which are female, and conſiſt only of the ovarium, with the ſtyle and ſtigma, which are ſurrounded with the petals. Other flowers there are, which have both ſexes contained in the ſame flower; theſe are called hermaphrodite flowers.

A fruit, Καρπὸς, is not that part of a plant which is eatable, but rather the ſeeds, with their covering, ſhould be called the fruit. This covering cheriſhes the ſeeds until they come to maturity, and defends them from the injuries of the weather, as that they are not hurt thereby; and alſo prepares the juices deſigned for their nouriſhment, that it may with eaſe enter their ſmall bodies in a juſt proportion.

The motion of the nutritious juices of plants is produced much like that of the blood in animals, by the action of the air; and, in effect, there ſeems to be ſomething equivalent to reſpiration throughout the whole plant.

Malpighius was the firſt who obſerved, that vegetables conſiſted of two ſeries, or orders, of veſſels.

1. Thoſe which have been treated of before, which receive and convey the alimental juices, and which anſwer to the arteries, lacteal veſſels, veins, &c. of animals; and,

2. The tracheæ, or air-veſſels, which are long hollow pipes, in which the air is continually received and expelled, i. e. inſpired and expired, within which tracheæ all the former veſſels are contained.

Hence it follows, that the heat of the year, nay, of a ſingle day, hour, or minute, muſt have an effect on the air included in theſe tracheæ, i. e. it muſt rarefy it, and, of conſequence, dilate the tracheæ; and hence alſo a perpetual ſpring or ſource of action muſt ariſe, to promote the motion of the ſap in plants.

For when the tracheæ are expanded, the veſſels which contain the juices, are, by that expanſion, preſſed; and, by that means, the juice contained is continually propelled and accelerated; and, by this propulſion, the juice is continually comminuted, and rendered more and more ſubtil, and adapted to enter into veſſels ſtill finer and finer; the thickeſt part of it being at the ſame time ſecreted, and depoſited into the lateral cells, or loculi of the bark, to defend the plant from cold, and other external injuries.

The veſſels, or containing parts of plants, conſiſt of mere earth, bound or connected together by oil, as a gluten, or glue; which being exhauſted by fire, air, age, or the like, the plant moulders, or returns again into its earth or duſt.

Thus vegetables being burnt by the moſt intenſe fire, the matter of the veſſels is left entire and indiſſoluble, notwithſtanding its utmoſt force; and, of conſequence, is neither water, nor air, nor ſalt, nor ſulphur, but earth alone.

Juice is a liquid ſubſtance, which makes part of the compoſition of plants, and communicates itſelf to all the other parts, and ſerves to feed and increaſe them; and is that to plants that blood is to animals. Theſe juices are of divers ſorts; aqueous, grumous, bituminous, oleaginous, reſinous, vinous; of all taſtes and colours.

This juice or ſap of plants, is a humour furniſhed by the earth, and changed in the plant; it conſiſts of ſome foſſil, or other parts, which are derived from the air or rain; and others, from putrefied animals, plants, &c. ſo that, conſequently, in vegetables are contained all kinds of ſalts, oil, water, earth, and, probably, all kinds of metals too, inaſmuch as the aſhes of vegetables always yield ſomewhat which is attracted by the load-ſtone.

The juice enters plants in the form of a fine ſubtil water, which by how much the nearer it is to the root, ſo much the more it retains of its proper nature; and the farther it is from the root, the more action it has undergone, and approaches the nearer to the nature of the vegetable; and, of conſequence, when the juice enters the root, the bark of which is furniſhed with excretory veſſels, fitted to diſcharge the excrementitious part, it is earthy, watry, poor, acid, and ſcarce oily at all.

It is further prepared in the trunk and branches, though it continue acid ſtill; as is perceived by the tapping or perforating of a tree in the month of February, when it diſtils a watry juice that is ſenſibly acid.

The juice being carried hence to the germs, or buds, is more connected; and when it has here unfolded the leaves, theſe come to ſerve as lungs for the circulation and further preparation of the juice; for when thoſe tender leaves are expoſed to the alternate action of heat and cold, moiſt nights, and hot ſcorching days, they are expanded and contracted alternately; and the more, by reaſon of their net-like texture.

By ſuch means, the juice is farther altered and digeſted, as it is farther yet in the petala, or leaves of the flowers, which tranſmit the juice now brought to a further ſubtilty to the ſtamina; the ſtamina communicate it to the farina, or that duſt which appears on the apices, where it undergoes a further maturation, and ſheds into the piſtil; and there acquiring its laſt perfection, it becomes the original of a new fruit or plant.

ANCHUSA. Lin. Gen. 167. Bugloſſum. Tourn. Inſt. R. H. 133. tab. 53.

The CHARACTERS are,

The empalement is oblong, taper, and permanent, cut into five acute ſegments which are erect. The flower is of one leaf, having a cylindrical tube the length of the empalement; at the brim it is cut into five upright ſegments, which ſpread open, but the chaps are cloſed, and have five prominent little ſcales. There are five ſhort ſtamina in the chaps of the flower, which are crowned with oblong ſummits. In the bottom of the flower are ſituated four germen, having a ſlender ſtyle, crowned with an obtuſe ſtigma. The germen afterward becomes four oblong blunt ſeeds ſhut up in the empalement.

Dr. Linnæus ranges this genus of plants in the firſt ſection of his fifth claſs of plants, entitled Pentandria Monogynia, the flowers having five ſtamina and a ſingle ſtyle.

The SPECIES are,

1. ANCHUSA (*Officinalis*) foliis lanceolatis ſpicis imbricatis ſecundis. Hort. Cliff. 46. *Alkanet with ſpear-ſhaped leaves, and fruitful imbricated ſpikes, or greater Garden Bugloſs.* Blugoſſum anguſtifolium majus. C. B. P. 256.

2. ANCHUSA (*Anguſtifolia*) racemis ſubnudis conjugatis. Prod. Leyd. 408. *Alkanet with conjugated half naked ſpikes.* Borago ſylveſtris perennis flore rufo kermeſino. Zan. Hiſt. 49.

3. ANCHUSA (*Undulata*) ſtrigoſa foliis linearibus dentatis pedicellis bracteâ minoribus calycibus fructiferis inflatis. Læſl. Lin. Sp. Plant. 133. *Alkanet with narrow indented leaves, ſmall foot-ſtalks to the branches, and a ſwelling empalement over the ſeeds.* Bugloſſum Luſitanicum echii folio undulato. Tourn. Inſt. 134.

4. ANCHUSA (*Orientalis*) villoſa-tomentoſa, ramis floribuſque alternis axillaribus, bracteis ovatis. Lin. Sp. 191. *Alkanet with branches and flowers growing alternately from the wings of the ſtalks, and oval bractea or floral leaves.* Bugloſſum Orientale flore luteo. Tourn. Cor. 6.

5. ANCHUSA (*Virginiana*) floribus ſparſis caule glabro. Lin. Sp. Plant. 133. *Alkanet with flowers growing thinly, and a ſmooth ſtalk.* Anchuſa minor lutea Virginiana Puccoon indigens dicta quâ ſe pingunt Americani. Pluk. Alm. 30. *Called by the inhabitants of Virginia, Puccoon.*

6. ANCHUSA (*Sempervirens*) pedunculis diphyllis capitatis. Lin. Sp. Plant. 134. *Alkanet with foot-ſtalks having two leaves.* Bugloſſum latifolium ſerpervirens. C. B. P.

7. ANCHUSA (*Cretica*) foliis lanceolatis verrucoſis ſemiamplexicaulibus, floribus capitatis, caule procumbente. *Alkanet with warted and ſpear-ſhaped leaves embracing the ſtalk half round, flowers growing in a head, and a trailing ſtalk.* Bugloſſum Creticum verrucoſum perlatum quibuſdam. H. R. Par.

8. ANCHUSA (*Tinctoria*) tomentoſa, foliis lanceolatis obtuſis, ſtaminibus corolla brevioribus. Lin. Sp. 192. *Anchuſa with woolly, ſpear-ſhaped, blunt leaves, and the ſtamina of the flower ſhorter than the corolla, or true Alkanet of the ſhops.*
9. ANCHUSA (*Azurea*) foliis longis hirſutis, floribus capitatis reflexis, pedunculis longiſſimis. *Alkanet with long hairy leaves, and flowers collected into heads which are reflexed, and very long foot-ſtalks.* Borago ſylveſtre Cretica flore azureo. Zan. Hiſt. 51.

The firſt ſort is the Bugloſs, whoſe flowers are ordered to be uſed in medicine. This ſends up ſtalks about two feet high, having oblong rough leaves, placed alternately, at the extremity of the ſhoots. The flowers are produced in cluſters, which are of a fine blue colour; theſe come out with foot-ſtalks from the wings of the leaves, and are collected into ſmall heads. The flowers are of one leaf, having a long tube, ſpread open at the top in ſhape of a funnel. After the flower is paſt, it is ſucceeded by four naked ſeeds, ſituated at the bottom of the empalement, which drop out as they ripen.

The roots of this ſort ſeldom continue longer than two years, eſpecially in good ground, for they are ſubject to rot in winter, unleſs when they happen to grow in rubbiſh, or out of an old wall, where they will live ſeveral years; for in ſuch places the plants are ſtinted in their growth, ſo their branches are firmer and not ſo full of juice as thoſe which grow in better ſoil. The plants may be eaſily propagated by ſeeds, which may be ſown in the autumn, upon a bed of light ſandy earth; and in the ſpring, when the plants are ſtrong enough to remove, they ſhould be planted in beds at two feet diſtance, obſerving, if the ſeaſon proves dry, to water them till they have taken root, after which they will require no farther care but to keep them clean from weeds. If the ſeeds of this plant are permitted to ſcatter, the plants will riſe in plenty, which may be managed in the manner before directed. There is a variety of this with white flowers, but this will not retain its difference from ſeeds.

The ſecond ſort grows to the height of two feet when cultivated in gardens, but in the places where it grows wild, is rarely more than a foot. The leaves of this are narrow, and leſs hairy than thoſe of the firſt; the ſpikes of flowers come out double, and have no leaves about them; the flowers are ſmall, and of a red colour. The roots will continue three or four years in poor land.

The third ſort is a biennial plant, which periſhes ſoon after the ſeeds are ripe. This grows two feet high, and ſends out many lateral branches, which are garniſhed with long, narrow, rough leaves, which are waved on their edges: the flowers are of a bright blue colour, and grow in an imbricated ſpike; and after theſe fall, the empalement turns to a ſwollen veſſel incloſing the ſeeds.

The fourth ſort is a perennial plant, with long trailing branches which lie on the ground; the under leaves are long, broad, and hairy, but theſe diminiſh as they are nearer the top, and thoſe which come out on the ſpikes between the flowers are ſhort and roundiſh. The flowers are yellow, and about the ſize of thoſe of the common Bugloſs; there is a ſucceſſion of theſe on the ſame plants great part of the year, which renders them more valuable. This, though a native of the Levant, is hardy enough to live in the open air in England, if it hath a dry ſandy ſoil. It may be propagated by ſeeds in the ſame manner as the firſt ſort, and if the ſeeds are permitted to ſcatter, the plants will riſe without care.

The fifth ſort is a native of North America, where it grows naturally in the woods, and being an early plant, generally flowers before the new leaves come out on the trees; ſo that in ſome of the woods, where this plant abounds, the ſurface of the ground ſeems covered with bright yellow flowers. It is known in that country by the title Puccoon. It is a perennial plant which ſeldom riſes a foot high in good ground, but not above half that height, where the ſoil is poor; the flowers grow in looſe ſpikes, upon a ſmooth ſtalk. This is propagated by ſeeds, which, if ſown in the ſpring, ſeldom grow the firſt year.

The ſixth ſort is a very hardy perennial plant, with weak trailing branches, garniſhed with broad, rough, deep green leaves; the flowers are blue, and come out between the leaves on the ſpike, like the fourth ſort; the plants frequently grow out of the joints of old walls, in thoſe places where any of the plants have been near; for when the ſeeds are permitted to ſcatter, there will be an abundant ſupply of the plants. Theſe flower great part of the year.

The ſeventh ſort is a low, trailing, annual plant, whoſe branches ſeldom extend more than ſix inches; theſe lie on the ſurface of the ground, and are thinly ſet with ſpear-ſhaped, ſmall, warted leaves, which half ſurround the ſtalk at their baſe. The flowers are ſmall, of a bright blue colour, and are collected into ſmall bunches at the extremity of the branches. The plants periſh ſoon after their ſeeds are ripe, which if permitted to ſcatter, the plants will come up better than when they are ſown. Theſe do not bear tranſplanting, ſo ſhould remain in the places where they come up.

The eighth ſort riſes near as high as the firſt, to which it bears great reſemblance in its leaves and branches; but the leaves and branches are more woolly, and the ſtamina of the flowers are ſhorter than the corolla; the root alſo is red. This plant grows naturally in the ſouth of France and Spain, but is equally hardy with the firſt ſpecies, and may be cultivated in the ſame manner.

The ninth ſort is a perennial plant, with broad rough leaves, like thoſe of the ſixth; the branches grow more erect, and the flowers which are of a bright azure colour, are collected into ſpikes, coming out ſingly from between the leaves. This is a hardy plant, and may be propagated in the ſame manner as the former.

ANDRACHNE, Baſtard Orpine.

The CHARACTERS are,

It hath male and female flowers on the ſame plant. The male flower hath a five-leaved empalement, which is equal and withers. The flower is compoſed of five ſlender leaves indented at the top, which are ſhorter than the empalement. At the bottom of each petal is ſituated an herbaceous nectarium, to which the five ſlender ſtamina are joined; theſe are crowned with ſingle ſummits. The female flowers come out from the wings of the ſtalk near the male. Theſe have a permanent five-leaved empalement, but no petals; there are five nectariums as in the male, and a globular germen ſupporting three ſlender ſtyles which are bifid, crowned with a round ſtigma. The germen afterward turns to a three cornered globular capſule, having three cells, in each of which are lodged two triangular obtuſe ſeeds.

The SPECIES are,

1. ANDRACHNE (*Telephioides*) procumbens herbacea. Lin. Sp. Plant. 1014. *Herbaceous trailing Andrachne.* Telephioides Græcum humifuſum flore albo. Tourn. Cor. 50.
2. ANDRACHNE (*Fruticoſa*) erecta arborea. Oſb. It. 228. *Shrubby tree-like Baſtard Orpine.*
3. ANDRACHNE (*Arborea*) foliis ovatis obtuſis, ſubtus incanis, caule arboreo. *Baſtard Orpine with oval blunt leaves, hoary on their under ſide, and a tree-like ſtalk.*

The firſt ſort is a low plant, whoſe branches trail upon the ground. The leaves are ſmall, of an oval ſhape, ſmooth, and of a ſea-green colour. It is found wild in ſome parts of Italy, and in the Archipelago, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris: but being a plant of no great beauty, it is ſeldom cultivated, except in botanic gardens for variety. If the ſeeds of this plant are ſown on a moderate hot-bed in March, the plants will ariſe in about a month after, when they may be tranſplanted each into a ſmall pot, and plunged into another very moderate hot-bed to bring the plants forward, but in mild weather they ſhould have plenty of air admitted to them, and often refreſhed with water: in June they will produce flowers, and the ſeeds will ripen in

Auguſt

Auguſt and September, ſoon after which the plants will decay.

The ſecond ſort grows naturally in China, and alſo at La Vera Cruz in New Spain, where it riſes twelve or fourteen feet high; the branches are garniſhed with ſpear-ſhaped, pointed, ſmooth leaves, under which the foot-ſtalk of the flowers are produced; theſe are pretty long and hang downward: the flowers are ſmall, of an herbaceous white colour, ſome of which are male, and others female, but when the latter are ſituated at too great diſtance from the former, there is rarely any ſeeds within their covers; though they ſeem very fair to ſight, yet upon being opened there will no ſeeds be found in them; whereby ſeveral perſons have been deceived, who have ſown them, without raiſing a ſingle plant.

The third ſort was diſcovered by the late Dr. William Houſton, growing naturally at Campeachy; this has a ſtrong woody ſtem, which riſes more than twenty feet high, ſending out branches on every ſide, which are garniſhed with oval blunt leaves, hoary on their under-ſide, and having pretty deep furrows on their upper, placed alternately on the branches: the flowers I have not ſeen, for the plant which roſe from the ſeeds in the phyſic garden did not produce any, tho' it grew upward of fourteen feet high; nor were there any flowers upon the trees at Campeachy, at the time Dr. Houſton was there, the ſeeds being then ripe; of theſe the doctor ſent many to Europe which appeared very fair, but on being opened, no kernels were found within them, ſo that but one plant was raiſed from all the ſeeds.

Theſe two ſorts are very tender plants, ſo that when good ſeeds can be obtained, they ſhould be planted in pots, plunging them into a hot-bed of tanners bark, obſerving to water them as the earth becomes dry in the pots; and when the plants come up, and are fit to remove, they ſhould be each planted in a ſmall pot, plunged into a tan-bed, ſhading them until they have taken freſh root, after which they ſhould have free air admitted to them in warm weather, but muſt be conſtantly kept in the bark-ſtove.

There is alſo another ſort which I have raiſed from ſeeds, ſent me from Jamaica; the whole form of the ſeeds agree with thoſe of the third ſort, as do alſo the plants, but the leaves are ſomewhat like thoſe of the Laurel, but are much larger; this hath not as yet flowered in Europe.

ANDROMEDA. Lin. Gen. Plant. 485. We have no Engliſh name for this plant.

The CHARACTERS are,

The empalement is cut into five ſmall acute ſegments; this is coloured and permanent. The flower is of one leaf, oval, bell-ſhaped, and divided into five parts at the brim, which are reflexed. It hath ten awl-ſhaped ſtamina, which are ſhorter than the petals to which they are fixed; theſe are crowned with nodding ſummits having two horns. In the center of the flower is ſituated a round germen, ſupporting a cylindrical ſtyle, which is longer than the ſtamina, and crowned with a blunt ſtigma. The germen afterward turns to a round pentagonal veſſel having five cells, which are filled with ſmall round ſeeds.

This genus of plants is ranged by Dr. Linnæus in the firſt diviſion of his tenth claſs, entitled Decandria Monogynia, the flowers having ten ſtamina and one germen.

The SPECIES are,

1. ANDROMEDA (*Polifolia*) pedunculis aggregatis, corollis ovatis, foliis alternis lanceolatis revolutis. Lin. Sp. Plant. 393. *Andromeda with aggregate foot-ſtalks, oval petals, and ſpear-ſhaped leaves growing alternately.* Polifolia. Buxb. Act. 2. p. 345.
2. ANDROMEDA (*Mariana*) pedunculis aggregatis corollis cylindricis foliis alternis ovatis integerrimis. Lin. Sp. Plant. 393. *Andromeda with aggregate foot-ſtalks, cylindrical flowers, and oval entire leaves placed alternately.*
3. ANDROMEDA (*Paniculata*) racemis fecundis nudis paniculatis, corollis ſubcylindricis foliis alternis oblongis crenulatis. Lin. Sp. Plant. 394. *Andromeda with naked, fruitful, looſe ſpikes, cylindrical flowers, and oblong crenated leaves placed alternately.* Vitis idæa Americana, longiori mucronato & crenato folio, floribus urceolatis racemoſis. Pluk. Alm. 391.
4. ANDROMEDA (*Arborea*) racemis fecundis nudis, corollis rotundo-ovatis. Lin. Sp. Plant. 394. *Andromeda with naked fruitful ſpikes, and oval roundiſh flowers.* Frutex foliis oblongis acuminatis floribus ſpicatis uno verſu diſpoſitis. Cateſb. Carolin. 1. p. 71. *commonly called Sorrel-tree in Carolina.*
5. ANDROMEDA (*Caliculata*) racemis fecundis foliaceis corollis ſubcylindricis, foliis alternis lanceolatis obtuſis punctatis. Lin. Sp. Plant. 394. *Andromeda with leafy fruitful ſpikes, cylindrical flowers, and obtuſe ſpear-ſhaped leaves, with punctures placed alternately.* Chamædaphne. Buxb. Act. 1. p. 241.

The firſt ſort is a low plant which grows naturally on bogs in the northern countries, but is with difficulty preſerved in gardens; and having little beauty, is ſeldom cultivated except in botanic gardens. I received the ſeeds from Peterſburgh, which came up in the Chelſea garden, but did not continue more than one year.

The ſecond ſort grows naturally in North America: this is a low ſhrub, which ſends out many woody ſtalks from the root, garniſhed with oval leaves placed alternately; the flowers are collected in ſmall bunches: theſe are ſhaped like thoſe of the Strawberry-tree, and are of an herbaceous colour. They appear in June and July, and ſometimes are ſucceeded by fruit, which ſeldom ripen in England.

The third ſort is alſo a native of North America. This ſhrub grows about four feet high, ſending out ſeveral branches, which are clothed with oblong leaves placed alternately; the flowers grow in looſe ſpikes from the ends of the branches; they are of the pitcher ſhape, like thoſe of the Arbutus, but are a little longer, and appear in July, but do not produce ſeeds in this country.

The fourth ſort grows naturally in Virginia and Carolina; in the latter it is much larger than in the former, the climate being warmer; ſo many of the trees and ſhrubs grow to a much greater height there. In Virginia, it is a ſhrub growing ten or twelve feet high, but in Carolina it riſes twenty feet. The branches are very ſlender, bending downward; theſe are garniſhed with leaves placed alternately, which are oblong and pointed: the flowers grow in long naked ſpikes, coming out from the ſides of the branches, which are of an herbaceous colour, and are ranged on one ſide of the ſtalk; they are oval, and ſhaped like a pitcher.

The fifth ſort grows naturally in Siberia, and alſo in North America; it is a low ſhrub which grows on moſſy land, ſo is very difficult to keep in gardens. The leaves are ſhaped like thoſe of the Box-tree, and are of the like conſiſtence, having ſeveral ſmall punctures on them; the flowers grow in ſhort ſpikes from the extremity of the branches: theſe are produced ſingle between two leaves, they are white and of a cylindrical pitcher ſhape.

All the ſorts, except the fourth, are very hardy plants, which delight in moiſt ground; they increaſe by their creeping roots, which put up ſuckers at a diſtance, and may be taken off with roots, and tranſplanted where they are deſigned to remain, for they do not bear to be often removed.

The fourth ſort requires to be ſheltered from hard froſt in winter, but in the ſummer ſhould be frequently watered. It is a difficult plant to keep in gardens, as it grows naturally on boggy places, and requires a greater heat than that of this climate. It may be propagated by ſeeds, which ſhould be procured from America, where it is known by the name of Sorrel-tree.

ANDROSACE. We have no Engliſh name for this plant.

The CHARACTERS are,

The flowers grow in an umbel; they have a many-leaved general involucrum. Each flower hath a five-cornered empalement

palement of one leaf, ſlightly indented at the top in five acute points, this is permanent: the flower is of one leaf, having an oval tube, incloſed by the empalement, but is plain at the brim, where it is divided into five parts. It hath five ſmall ſtamina within the tube, which are crowned with oblong erect ſummits. In the center is ſituated a round germen, ſupporting a ſhort ſlender ſtyle, crowned by a globular ſtigma; the empalement afterward becomes a round capſule of one cell opening in five parts, which is full of round ſeeds.

Dr. Linnæus ranges this genus of plants in the firſt ſection of his fifth claſs, entitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. ANDROSACE (*Maxima*) perianthiis fructuum maximis. Hort. Upſal. 36. *Androſace with the largeſt empalement to the fruit.* Androſace vulgaris latifolia annua. Tourn. Inſt. R. H. 123.
2. ANDROSACE (*Septentrionalis*) foliis lanceolatis dentatis glabris perianthiis angulatis corollâ brevioribus. Flor. Suec. 160. *Androſace with ſmooth, indented, ſpear-ſhaped leaves, and an angular empalement ſhorter than the petals.* Alſine verna Androſaces capitulis. C. B. P. 251.
3. ANDROSACE (*Villoſa*) foliis piloſis perianthiis hirſutis. Lin. Sp. Plant. 142. *Androſace with hairy leaves and empalement.* Sedum Alpinum hirſutum lacteo flore. C. B. P. 284.
4. ANDROSACE (*Carnea*) foliis ſubulatis glabris, umbella involucrum æquante. Lin. Sp. 204. *Androſace with ſmooth awl-ſhaped leaves, and the umbel of flowers equal to the involucrum.*
5. ANDROSACE (*Lactea*) foliis linearibus glabris, umbellâ involucris multoties longiore. Lin. Sp. Plant. 142. *Androſace with narrow ſmooth leaves, and the umbel much longer than the involucrum.* Androſace Alpina perennis anguſtifolia glabra flore ſingulari. Tourn. Inſt. R. H.

The firſt ſort grows naturally in Auſtria and Bohemia amongſt the corn: this hath broad leaves which ſpread near the ground, from the center of theſe the foot-ſtalks ariſe, which are terminated by the umbel of flowers, like thoſe of the Auricula; under the umbel of flowers is a large empalement, which is permanent; the flowers are compoſed of five ſmall white petals; theſe appear in April and May, the ſeeds ripen in June, and the plants ſoon after periſh.

The other ſorts are much ſmaller than this, ſome of them ſeldom growing more than three inches high, having very ſmall flowers, ſo make little appearance. They grow naturally on the Alps and Helvetian mountains, as alſo in Siberia, from whence I have received the ſeeds of three or four ſpecies. Theſe are only preſerved in botanic gardens for the ſake of variety, and all the ſorts except the firſt ſhould have a ſhady ſituation.

The ſeeds of all the ſorts ſhould be ſown ſoon after they are ripe, otherwiſe they ſeldom grow the ſame year. They flower uſually the beginning of April, and their ſeeds are ripe the end of May; which, if permitted to ſcatter, will come up, and often ſucceed better than thoſe which are ſown. The annual ſorts periſh as ſoon as the ſeeds are ripe, but the others will live in an open border for ſeveral years, and require no other care, but to keep them clean from weeds.

ANDROSÆMUM. See HYPERICUM.

ANDRYALA. Lin. Gen. Plant. 820. Downy Sowthiſtle.

The CHARACTERS are,

It hath a ſhort, round, hairy empalement, cut into many equal ſegments; the flowers are compoſed of many hermaphrodite florets of one leaf, which are uniform, and lie over each other, ſtretched out like a tongue on one ſide. There are five ſtamina in the flowers; theſe are crowned by cylindrical ſummits, which are tubulous. The germen is ſituated at the bottom of each floret, with a ſlender ſtyle, crowned by two reflexed ſtigma. The germen afterward becomes a ſingle oval ſeed, crowned with down.

This genus of plants is by Dr. Linnæus ranged in the firſt ſection of his nineteenth claſs, entitled Syngeneſia Polygamia equalis, there being many hermaphrodite flowers included in one common empalement.

The SPECIES are,

1. ANDRYALA (*Integrifolia*) foliis integris ovato oblongis tomentoſis. Guett. Stamp. 2. p. 384. *Downy Sowthiſtle with oval, oblong, entire, downy leaves.* Sonchus lanatus. Dalech. Hiſt. 1116.
2. ANDRYALA (*Raguſina*) foliis lanceolatis indiviſis denticulatis acutis tomentoſis, floribus ſolitariis. Lin. Sp. Plant. 1136. *Downy Sowthiſtle with indented, ſpear-ſhaped, woolly leaves.* Sonchus villoſus luteus minor. C. B. P. 124.
3. ANDRYALA (*Sinuata*) foliis runcinatis. Lin. Sp. 1137. *Downy Sowthiſtle with plain-ſhaped leaves.*
4. ANDRYALA (*Lanata*) foliis oblongo-ovatis ſubdentatis lanatis, pedunculis ramoſis. Amœn. Acad. 4. p. 288. *Downy Sowthiſtle with woolly, oblong, oval leaves, and branching foot-ſtalks.* Hieracium montanium tomentoſum. Hort. Elth. tab. 150.

The firſt is an annual plant, which grows naturally in the ſouth of France, Spain, and Italy, and is preſerved in botanic gardens for the ſake of variety. This grows a foot and a half high, with woolly branching ſtalks, having leaves ſcatteringly ſet on them, which are oblong and downy. The flowers are produced in ſmall cluſters at the top of the ſtalks, which are yellow, and like thoſe of the Sowthiſtle, ſo do not make any great appearance. It is eaſily raiſed by ſeeds, which ſhould be ſown in the ſpring, in the place where the plants are to remain, and will require no other culture but to thin them where they are too cloſe, and keep them clean from weeds. It flowers in July, and the ſeeds ripen in September.

The ſecond is a perennial plant, which grows naturally in Spain, from whence I received the ſeeds, as I have alſo from the Cape of Good Hope. The leaves of this plant are extremely white, and are much indented on their edges; the flower-ſtalks grow about a foot high, having ſmall cluſters of yellow flowers, which appear in July; the ſeeds ſometimes ripen in England, but not every year. The roots creep, by which the plants may be propagated. They love a light dry ſoil, in which they will live in the open air in this country.

The third ſort grows naturally in Sicily, and alſo near Montpelier; the lower leaves of this ſort are indented and woolly, but thoſe upon the ſtalks are entire; this ſeldom riſes more than a foot high, ſupporting a few yellow flowers at the top.

The fourth ſort grows in Spain and Portugal; the leaves of this are broader, longer, and more downy, than either of the other ſorts, the flower-ſtalks riſe more than a foot high, branching into ſeveral foot-ſtalks, each ſuſtaining one large yellow flower, ſhaped like thoſe of Hawkweed, which are ſucceeded by oblong black ſeeds crowned with down.

Theſe two plants are propagated by ſeeds, in the ſame manner as the former, which ſhould be ſown in autumn, for when they are ſown in the ſpring, the plants ſeldom riſe the ſame year.

ANEMONE [Ἀνεμώνη, of ἄνεμος, *Gr.* the wind; ſo called, becauſe the flower is ſuppoſed not to open, except the wind blows.] Wind-flower.

The CHARACTERS are,

The flower is naked having no empalement, and conſiſts of two or three orders of leaves or petals, which are oblong, and diſpoſed in three ſeries over each other. It hath a great number of ſlender ſtamina which are ſhorter than the petals, and are crowned by double ſummits which are erect; between theſe are ſituated many germen, which are collected into a head, ſupporting a pointed ſtyle crowned with a blunt ſtigma. The germen afterward become ſo many ſeeds incloſed with a down which adheres to the foot-ſtalk, and forms an obtuſe cone.

Dr. Linnæus ranges this genus of plants in the ſixth ſection of his thirteenth claſs, entitled Polyandria Polygynia, from the flowers having many ſtamina and germen.

The

The Species are,

1. Anemone (*Sylveſtris*) pedunculo nudo ſeminibus ſubrotundis hirſutis. Lin. Sp. Plant. 540. *Anemone with a naked ſtalk and a round head of hairy ſeeds.* Anemone ſylveſtris alba major. C. B. P. 176.
2. Anemone (*Nemoroſa*) ſeminibus acutis foliolis inciſis caule unifloro. Hort. Cliff. 224. *Anemone with pointed ſeeds, cut leaves, and a ſingle flower.* Anemone nemoroſa flore majore. C. B. P. 176.
3. Anemone (*Apennina*) ſeminibus acutis foliolis inciſis petalis lanceolatis numeroſis. Lin. Sp. Plant. 541. *Anemone with pointed ſeeds, cut leaves, and many ſpear-ſhaped flower leaves.* Ranunculus nemoroſus flore purpureo-cæruleo. Park. Theat. 325.
4. Anemone (*Virginiana*) pedunculis alternis longiſſimis fructibus cylindricis ſeminibus hirſutis muticis. Lin. Sp. Plant. 540. *Anemone with very long alternate foot-ſtalks, and cylindrical ſpikes of chaffy ſeeds.* Anemone Virginiana tertiæ Matthioli ſimilis flore parvo. H. L. 645.
5. Anemone (*Coronaria*) foliis radicalibus ternato-decompoſitis, involucro folioſo. Lin. Sp. Plant. 539. *Anemone with lower leaves decompounded, and a leafy involucrum.* Anemone tenuifolia ſimplici flore. C. B. P. 174.
6. Anemone (*Hortenſis*) foliis digitatis. Lin. Sp. Plant. 540. *Anemone with hand-ſhaped leaves.* Anemone hortenſis latifolia. 3 Cluſ. Hiſt. 1. p. 249.
7. Anemome (*Dichotoma*) caule dichotoma, foliis ſeſſilibus oppoſitis amplexicaulibus trifidis inciſis. Amæn. Acad. 1. p. 155. *Anemone with a forked ſtalk, and trifid cut leaves growing oppoſite, which embrace the ſtalks.*
8. Anemone (*Thalictroides*) foliis caulinis ſimplicibus verticillatis, radicalibus duplicato ternatis. Lin. Sp. 763. *Anemone with ſimple leaves on the ſtalk, growing in whorles, and thoſe at the root double ternate.*

The firſt ſort grows naturally in many parts of Germany; this approaches near to our Wood Anemone, but the ſeeds of it are round and hairy; the flower is large and white, but having little beauty, is ſeldom planted in gardens.

The ſecond ſort grows wild in the woods in many parts of England, where it flowers in April and May, making a pretty appearance in thoſe places where they are in plenty. The roots of this may be taken up when their leaves decay, and tranſplanted in wilderneſſes, where they will thrive and increaſe greatly, if they are not diſturbed; and in the ſpring, before the trees are covered with leaves, they will have a very good effect, in covering of the ground and making a pleaſing variety at that ſeaſon.

The third ſort is found growing naturally in ſome parts of England, but particularly at Wimbledon in Surry, in a wood near the manſion-houſe, in great plenty; but it is not certain that they were not originally planted there, as they are not found in any other place in that neighbourhood. This ſort flowers at the ſame time with the former, and when intermixed with them, make a fine variety. This may be tranſplanted from the woods as the former.

There are of theſe two ſorts, ſome with double flowers, which have been obtained from ſeeds. Theſe make a finer appearance, and continue longer in flower than the ſingle, but are only to be procured from the gardens, where they are cultivated. As theſe are only ſeminal varieties, I have not enumerated them with the others.

The fourth ſort grows naturally in North America, from whence the ſeeds are frequently ſent to England. This is a very hardy plant, and produces plenty of ſeeds in England, but having little beauty, ſcarce deſerves a place in gardens, unleſs for the ſake of variety.

The fifth and ſixth ſorts are natives of the eaſt, from whence their roots were brought originally; but have been ſo greatly improved by culture, as to render them ſome of the chief ornaments to our gardens in the ſpring. The principal colours of theſe flowers are red, white, purple, and blue, and ſome are finely variegated with red, white, and purple. There are many intermediate ſhades of theſe colours; the flowers

are large and very double, and, when properly managed, are extremely beautiful. I ſhall therefore proceed to give ample directions for their culture, which, if duly obſerved, every perſon may have theſe flowers in perfection.

Take a quantity of freſh untried earth (from a common, or ſome other paſture land) that is of a light ſandy loam, or hazel mould, obſerving not to take it above ten inches deep below the ſurface; and if the turf be taken with it the better, provided it hath time to rot thoroughly before it is uſed: mix this with a third part of rotten cow dung, and lay it in a heap, keeping it turned over at leaſt once a month for eight or ten months, the better to mix it, and rot the dung and turf, and to let it have the advantages of the free air: in doing this be careful to rake out all great ſtones, and break the clods (but by no means ſift or ſcreen the earth, which is found very hurtful to many ſorts of roots); for when the earth is made very fine, upon the firſt great rains of winter or ſpring, the ſmall particles thereof join cloſely together, and form one ſolid maſs, ſo that the roots often periſh for want of ſome ſmall ſtones to keep the particles aſunder, and make way for the tender fibres to draw nouriſhment for the ſupport of the root.

This earth ſhould be mixed twelve months before it is uſed, if poſſible; but if you are conſtrained to uſe it ſooner, you muſt turn it over the oftener, to mellow and break the clods; and obſerve to rake out all the parts of the green ſward, that are not quite rotten, before you uſe it, which would be prejudicial to your roots, if ſuffered to remain. The beginning of September is a proper ſeaſon to prepare the beds for planting (which, if in a wet ſoil, ſhould be raiſed with this ſort of earth ſix or eight inches above the ſurface of the ground, laying at the bottom ſome of the rakings of your heap to drain off the moiſture; but in a dry ſoil, three inches above the ſurface will be ſufficient): this compoſt ſhould be laid at leaſt two feet and a half thick, and in the bottom there ſhould be about four or five inches of rotten neats dung, or the rotten dung of an old Melon or Cucumber-bed, ſo that you muſt take out the former ſoil of the beds to make room for it.

And obſerve in preparing your beds, to lay them (if in a wet ſoil) a little round, to ſhoot off the water; but in a dry one, let it be nearer to a level; in wet land, where the beds are raiſed above the ſurface, it will be proper to fill up the paths between them in winter, either with rotten tan or dung, to prevent the froſt from penetrating into the ſides of the beds, which often deſtroy their roots. The earth ſhould be laid in the beds at leaſt a fortnight or three weeks before you plant the roots, that it may ſettle; and when you plant them, ſtir the upper part of the ſoil about ſix inches deep, with a ſpade; then rake it even and ſmooth, and with a ſtick draw lines each way of the bed at ſix inches diſtance, ſo that the whole may be in ſquares, that the roots may be planted regularly: then with your three fingers make a hole in the center of each ſquare, about three inches deep, laying therein a root with the eye uppermoſt; and when you have finiſhed your bed, with the head of a rake draw the earth ſmooth, ſo as to cover the crown of the roots about two inches.

The beſt ſeaſon for planting theſe roots, if for forward flowers, is about the latter end of September; and for thoſe of a middle ſeaſon, any time in October; but obſerve to perform this work, if poſſible, at or near the time of ſome gentle ſhowers; for if the roots are planted when the ground is perfectly dry, and there ſhould no rain fall for three weeks or a month after, they will be very apt to grow mouldy upon the crown, and if they once get this diſtemper, they ſeldom come to good after.

You may alſo reſerve ſome of your Anemone roots till after Chriſtmas, before you plant them, leſt by the ſeverity of the winter your early planted roots ſhould be deſtroyed, which ſometimes happens in very hard winters, eſpecially in thoſe places where

they are not covered to protect them from froſt: theſe late planted roots will flower a fortnight or three weeks after thoſe which were planted in autumn, and many times blow equally as fair, eſpecially if it prove a moiſt ſpring, or that care be taken to refreſh them gently with water.

But then the increaſe of theſe roots will not be near ſo great as thoſe of your firſt planting, provided they were not hurt in winter; and it is for this reaſon all thoſe who make ſale of theſe roots, are forward in planting; for although it may happen, by ſharp pinching froſts in the ſpring, that their flowers are not ſo double and fair as thoſe planted a little later, yet if they can preſerve the green leaves of the plants from being injured, the roots will greatly increaſe in bulk; but in ſuch gardens where theſe flowers are preſerved with care, there is always proviſion made to cover them from the injuries of the weather, by arching the beds over with hoops, or frames of wood, and covering them with garden-mats or cloths, in froſty nights, and bad weather, eſpecially in the ſpring of the year, when their buds begin to appear; for otherwiſe, if you plant the beſt and moſt double flowers, the black froſts and cutting winds in March will cauſe them to blow ſingle, by deſtroying the thrum that is in the middle of the flower; and this many times hath occaſioned many people who have bought the roots, to think they were cheated in the purchaſe of them, when it was wholly owing to their neglect of covering them, that their flowers were ſingle.

In the beginning of April your firſt planted roots will begin to flower, which will continue for three weeks or more, according to the heat of the weather, or the care taken in covering them, during the heat of the day, with mats or cloths: after theſe are paſt flowering, the ſecond planted ſorts will come to ſucceed them, and theſe will be followed by thoſe planted in the ſpring; ſo that you may have theſe beauties continued for near two months together, or ſometimes longer, if the ſeaſon prove favourable, or proper care is taken to ſhade them in the heat of the day.

The beginning of June, the leaves of your firſt blown roots will begin to decay; ſoon after which time you muſt take them out of the ground, clearing them from decayed ſtalks, and waſhing them, to take the earth clean from the root; then ſpread them on a mat in a dry ſhady place till they are perfectly dried, when you may put them up in bags, and hang them out of the reach of mice, or other vermin, which will deſtroy many of the roots if they can come at them.

Obſerve alſo to take up the latter planted roots as ſoon as their leaves decay; for if they are ſuffered to remain long after in the ground, and there ſhould fall ſome ſhowers of rain, they would ſoon put forth freſh fibres, and make new ſhoots, when it would be too late to remove them: at the time when you take up the roots, is the proper ſeaſon for breaking or parting them, which may be done by ſeparating thoſe that you would chooſe to make all poſſible increaſe from, into as many parts as you can conveniently, provided each one of them have a good eye or bud; but thoſe you intend to blow ſtrong, ſhould by no means be parted too ſmall, which greatly weakens their flowering.

The principal colours in Anemonies are, white, red, blue, and purple; and theſe in ſome of them, are curiouſly intermixed; but the moſt prevailing colours amongſt our Engliſh raiſed Anemonies, are white and red; though of late we have received from France great varieties of blues and purples, which are exceeding fine flowers, and being intermixed with the Engliſh flowers, make a fine variety: we ſhould therefore obſerve, in planting the roots, to diſtribute the different colours, ſo as to make an agreeable mixture of each in every bed, which will greatly add to their beauty.

But ſince all the fine varieties of theſe flowers were firſt obtained from ſeeds, no good floriſt, that hath garden room, ſhould neglect to ſow them: in order to which, we ſhould provide ourſelves with a quantity

of good ſingle (or what the gardeners call Poppy Anemonies) of the beſt colours, and ſuch as have more leaves than common, and have other good properties; theſe ſhould be planted early, that they may have ſtrength to produce good ſeeds, which will be ripe in three weeks or a month's time, after the flowers are paſt; when you muſt carefully gather it, otherwiſe it will be blown away in a ſhort time, it being incloſed in a downy ſubſtance. You muſt preſerve this ſeed till the beginning of Auguſt, when you may either ſow it in pots, tubs, or a well prepared bed of light earth: in the doing of it you muſt be careful not to let your ſeeds be in heaps, to avoid which is a thing little underſtood, and is what I have been informed of by the late Mr. Obadiah Lowe, gardener at Batterſea, who for ſeveral years raiſed large quantities of theſe flowers from ſeeds. His manner was thus:

After having levelled his bed of earth, in which he intended to ſow his ſeeds, he rubbed the ſeeds well between his hands, with a little dry ſand, in order to make them ſeparate the better; then he ſowed them as regularly as poſſible over the bed; but as theſe ſeeds will ſtill adhere cloſely together by their down, he took a ſtrong hair bruſh, with which he gently ſwept over the whole bed, obſerving not to bruſh off the ſeeds; this bruſh will ſo ſeparate the ſeeds, if carefully managed, as not to leave any entire lumps; then gently ſift ſome light earth, about a quarter of an inch thick over the ſeeds; and, if it ſhould prove hot dry weather, it will be adviſable to lay ſome mats hollow upon the bed in the heat of the day, and now and then give them a little water; but this muſt be given gently, leſt by haſtily watering you waſh the ſeeds out of the ground; but be ſure to uncover the bed at all times when there are gentle ſhowers, and every night, that the ſeeds may have the benefit of the dews; and as the heat of the weather decreaſes, you may begin to uncover your bed in the day time alſo.

In about ten weeks after ſowing, the plants will begin to appear, if the ſeaſon has proved favourable, or your care in management hath not been wanting, otherwiſe they many times remain a whole year in the ground. The firſt winter after their appearing above ground, they are ſubject to injuries from hard froſts, or too much wet, againſt both of which you muſt equally defend them; for the froſt is very apt to looſen the earth, ſo that the young plants are often turned out of the ground, after which a ſmall froſt will deſtroy them; and too much wet often rots their tender roots, ſo that all your former trouble may be loſt in a ſhort time for want of care in this particular; nor do I know of any thing more deſtructive to theſe tender plants, than the cold black froſts and winds of February and March, from which you muſt be careful to defend them, by placing a low reed fence on the north and eaſt ſides of the bed, which may be moveable, and only faſtened to a few ſtakes to ſupport it for the preſent, and may be taken quite away as the ſeaſon advances; or removed to the ſouth and weſt ſides of the bed, to ſcreen it from the violence of the ſun, which often impairs theſe plants when young.

As the ſpring advances, if the weather ſhould prove dry, you muſt gently refreſh them with water, which will greatly ſtrengthen your roots; and when the green leaves are decayed, if your roots are not too thick to remain in the ſame bed another year, you muſt clear off all the weeds and decayed leaves from the bed, and ſift a little more of the ſame prepared good earth, about a quarter of an inch thick over the ſurface, and obſerve to keep them clear from weeds during the ſummer ſeaſon, and at Michaelmas repeat the ſame earthing; but as theſe roots ſo left in the ground, will come up early in the autumn, the beds ſhould be carefully covered in froſty weather, otherwiſe their leaves will be injured, whereby the roots will be weakened, if not deſtroyed. If your roots ſucceed well, many of them will flower the ſecond year, when you may ſelect all ſuch as you like, by marking them with a ſtick; but you ſhould not deſtroy any of them

until after the third year, when you have ſeen them blow ſtrong, at which time you will be capable to judge of their goodneſs; for until the roots have acquired ſtrength, the flowers will not ſhew themſelves to advantage.

By this time your roots will be too thick in the ſeed-bed to remain, therefore you muſt, as ſoon as their green leaves are decayed, ſift the earth of your bed through a very fine ſieve, in order to get out the roots, which can be no otherwiſe found, as being ſmall, and ſo nearly the colour of the ground; but in doing this, obſerve not to diſturb the ground too deep, ſo as to endanger the burying any of the roots; for, notwithſtanding all your care, many ſmall roots will be left behind, therefore as ſoon as you have ſifted your whole bed, and taken out all the roots you can find, you muſt level the earth of your bed again, and let it remain till next year, when you will find a plentiful crop of roots come up again; the young roots which you take up muſt be dried, as was directed for the old ones, but ſhould be planted again three weeks before them, that they may increaſe in ſtrength, ſo as to flower ſtrongly the ſucceeding year.

The ſingle (or Poppy) Anemonies will flower moſt part of the winter and ſpring, when the ſeaſons are favourable, if they are planted in a warm ſituation, at which time they make a fine appearance, therefore deſerve a place in every flower-garden, eſpecially as they require little culture; for if theſe roots are taken up every other year, it will be often enough; and when they are taken up, they ſhould be planted again very early in the autumn, otherwiſe they will not flower till the ſpring. There are ſome fine blue colours amongſt theſe ſingle Anemonies, which, with the Scarlets and Reds, make a beautiful mixture of colours; and as theſe begin flowering in January or February, when the weather is cold, they will continue a long time in beauty, provided the froſt is not too ſevere. The ſeeds of theſe are ripe by the middle or end of May, and muſt be gathered daily as it ripens, otherwiſe it will ſoon be blown away by the winds.

The Anemone grows naturally in the Levant, particularly in the iſlands of the Archipelago, where the borders of the fields are covered with them of all the colours, but the flowers are ſingle, and have been greatly improved by culture. In France they were long cultivated before they were much known in Holland or England. Tournefort mentions two French gentlemen, Meſſrs. Malaval and Bachelier, who contributed greatly to the improvement of theſe flowers; and of the latter he relates a pleaſant ſtory, as follows: There was a certain lawyer to whom Mr. Bachelier had refuſed to communicate the ſeeds of his fine Anemonies, and finding he could not obtain any either by friendſhip or money, a fancy came into his head, to make a viſit to Mr. Bachelier, with ſome of his friends who were in the ſecret; he ordered his lacquey who ſupported the train of his gown, to let it drop on a bed where the Anemonies grew, which he wanted, whoſe ſeeds were then ripe. They walked a conſiderable time talking on various ſubjects, and when they came to the ſpot where the Anemonies grew, a merry gentleman of the company began a ſtory, which engaged the attention of Mr. Bachelier; at which time the lacquey, who was no fool, let fall his maſter's train over the bed, and the ſeeds having a downy covering, ſtuck to the gown, which the boy afterwards took up again, and the company went forward. The virtuoſo took leave of Mr. Bachelier, and went directly home, where he carefully picked off the ſeeds which had ſtuck to his robes, and ſowed them, which produced very beautiful flowers.

The ſeventh ſort grows naturally in Canada and Siberia; the roots of this creep and multiply greatly in the ground, the lower leaves are deeply cut; the ſtalks riſe two feet high, garniſhed with leaves placed oppoſite, which embrace the ſtalks, and the flowers are produced from the forks of the ſtalks upon ſlender foot-ſtalks; theſe flowers are white, and being ſmall, make little appearance, ſo the plant is rarely preſerved, except in botanic gardens for variety: it is a very hardy plant, and multiplies very faſt where it is allowed to have a place.

The eighth ſort is a very humble plant, ſeldom riſing more than ſix inches high. This grows naturally in the woods of North America, where it flowers early in the ſpring, when it makes a pretty appearance, eſpecially if many of the plants grow in cluſters: ſome of theſe flowers are double, which make a better appearance than the ſingle, and continue longer in beauty. The leaves of this plant are very like thoſe of Meadow Rue; the ſtalks have leaves growing in whorles, and are terminated by a ſingle flower: this ſort ſhould be planted under the ſhelter of trees, and if the ſurface of the ground is covered with rotten tanners bark in winter, it will greatly preſerve the plants.

ANEMONOIDES. See ANEMONE.

ANEMONOSPERMOS. See ARCTOTIS.

ANETHUM, Dill, from ἄνω and θέειν, to run up; becauſe it is quick of growth.

The CHARACTERS are,

It is an umbelliferous plant, having many umbels, which have no involucrum. The umbels are uniform, and compoſed of many ſmaller ones. The flowers have five ſpear-ſhaped petals, each of theſe have five ſlender ſtamina, crowned with blunt ſummits; under the flower is ſituated the germen, ſupporting two ſmall ſtyles crowned with blunt ſtigma; the germen afterward becomes two compreſſed ſeeds having borders.

This genus of plants is ranged in the ſecond ſection of the fifth claſs of Linnæus's genera, which is entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

We have but one SPECIES of this genus, viz.

ANETHUM (*Graveolens*) fructibus compreſſis. Hort. Cliff. 106. *Dill with compreſſed ſeeds.* Anethum hortenſe. C. B. P. 147. *Common Dill.*

There are two other varieties which are mentioned as diſtinct ſpecies by the botaniſts, but I have frequently ſown them, and have always found them prove to be only varieties ariſing from the ſame ſeeds.

This plant is propagated by ſowing the ſeeds, which ſhould be done in autumn ſoon after they are ripe; for if they are kept out of the ground till ſpring, they frequently miſcarry; or if any of the plants come up, they often decay before they have perfected their ſeeds. They love a light ſoil, and will not bear to be tranſplanted, but muſt be ſown where they are to remain, and ſhould be allowed eight or ten inches room to grow, otherwiſe they will draw up very weak, and produce few lateral branches, whereby their leaves will decay, and be rendered uſeleſs, nor will they produce ſo good ſeeds; therefore the beſt way is, when the plants are come up, to hoe them out, as is practiſed for Onions, Carrots, &c. leaving the plants about eight or ten inches aſunder every way, obſerving to keep them clear from weeds; and when the ſeeds begin to be formed, you ſhould cut up thoſe that are intended to be put into the pickle for Cucumbers, leaving thoſe that are intended for the uſe of the ſeeds until they are ripe; at which time it ſhould be cut, and ſpread upon a cloth to dry, and then beat out for uſe: if you let the ſeeds fall upon the ground, the plants will riſe the next ſpring without any care, ſo that the trouble of ſowing their ſeeds may be ſpared.

ANGELICA [of *Angelus*, ſo called, as ſome quacks, &c. pretend, from the angels, on account of its excellent qualities.]

The CHARACTERS are,

It is an umbelliferous plant, the greater umbel being compoſed of many ſmall ones; the involucrum, or cover of the large umbel, is compoſed of five ſmall leaves, and thoſe of the ſmaller of eight, and the empalement of the flowers are indented in five parts. The flowers of the whole umbel are uniform, each of them conſiſt of five petals which fall away; theſe have five ſtamina, which are longer than the petals, and are crowned with ſingle ſummits. The germen

germen is ſituated below the flower, ſupporting two reflexed ſtyles, crowned with obtuſe ſtigma; the germen afterward becomes a roundiſh fruit ſplitting into two, and compoſed of two ſeeds, which are plain on one ſide, convex on the other, and are bordered.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, from the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. ANGELICA (*Sativa*) foliorum impari lobato. Flor. Lapp. 101. *Angelica with leaves compoſed of an unequal number of lobes.* Angelica ſativa. C. B. P. 155. *Garden Angelica.*
2. ANGELICA (*Archangelica*) altiſſima foliorum lobatis maximis ſerratis. *Talleſt Angelica with leaves compoſed of large ſerrated lobes.* Angelica ſcandiaca Archangelica. Tabern. Icon. 82.
3. ANGELICA (*Sylveſtris*) foliis æqualibus ovato-lanceolatis ſerratis. Hort. Cliff. 97. *Angelica with equal leaves, compoſed of oval ſpear-ſhaped lobes which are ſawed.* Angelica ſylveſtris major. C. B. P. 155.
4. ANGELICA (*Atropurpurea*) extimo foliorum pari coadunato folio terminali petiolato. Prod. Leyd. 103. *Angelica with the extreme pair of leaves joined, and terminated with a foot-ſtalk.* Angelica Canadenſis atropurpurea. Cornut. Canad. 198.
5. ANGELICA (*Lucida*) foliis æqualibus ovatis inciſo-ſerratis. Hort. Cliff. 97. *Angelica with equal leaves and oval lobes, which are cut and ſawed.* Angelica lucida Canadenſis. Cornut. Canad. 196.

The firſt ſort is the common Angelica, which is cultivated in the gardens for medicinal uſe, as alſo for making a ſweetmeat, which is by ſome greatly eſteemed. This grows naturally by the ſide of rivers in northern countries.

The ſecond ſort grows naturally in Hungary, and ſome parts of Germany. This hath been ſuppoſed to be only a variety of the firſt by many modern botaniſts; but from many years experience in the culture of this plant, I could never obſerve any alteration in it; for all the plants which I raiſed from ſeeds, proved exactly the ſame as the parent plant, and when planted in the ſame ſoil with the common ſort, they were twice their ſize. The leaves were alſo much larger, and deeper ſawed on their edges, the umbels much larger, and the flowers were yellow. This ſort ſeldom continues longer than two or three years, ſo that young plants ſhould be raiſed to preſerve the ſpecies. The ſeeds ſhould be ſown in autumn, for thoſe which are ſown in the ſpring ſeldom ſucceed.

The third ſort grows naturally in moiſt meadows, and by the ſides of rivers in many parts of England, ſo is ſeldom admitted into gardens.

The fourth and fifth ſorts grow naturally in North America, from whence their ſeeds were ſent to Europe, where the plants are preſerved in gardens for the ſake of variety; but as they have no uſe and but little beauty, they are not admitted into many gardens. They are both very hardy plants, and may be eaſily propagated by ſeeds, which ſhould be ſown in autumn, and when the plants are large enough to remove, they muſt be tranſplanted into a moiſt ſoil, and have a ſhady ſituation, allowing them two feet room on every ſide. They grow four or five feet high, and put out many ſhoots from the root, eſpecially the ſecond year from ſeed, when they will flower in June, and the ſeeds ripen in September. The roots of theſe ſorts ſeldom continue longer than two or three years. The common Angelica delights to grow in a very moiſt ſoil; the ſeeds of this plant ſhould be ſown ſoon after they are ripe, for if they are kept until the ſpring, ſeldom one ſeed in forty will grow. When the plants are come up about ſix inches high, they ſhould be tranſplanted at a large diſtance, for their leaves extend very wide; the beſt place for this plant is upon the ſides of ditches, or pools of water; where being planted about three feet aſunder, they will thrive exceedingly. The ſecond year after ſowing, they will ſhoot up to flower; therefore if you have a mind to continue their roots, you ſhould cut down theſe ſtems in May, which will occaſion their putting out heads from the ſides of the roots, whereby they may be continued for three or four years; whereas, if they had been permitted to ſeed, their roots would periſh ſoon after.

The gardeners near London, who have ditches of water running through their gardens, propagate great quantities of this plant, for which they have a great demand from the confectioners, who make a ſweetmeat with the tender ſtalks of it cut in May.

This plant is alſo uſed in medicine, as are alſo the ſeeds; therefore where it is cultivated for the ſeeds, there ſhould be new plantations annually made to ſupply the places of thoſe which die, for when they are permitted to ſeed, they laſt but two years.

ANGUINA. See TRICOSANTHES.

ANGURIA, the Water Melon, or Citrul.

The CHARACTERS are,

It hath male and female flowers growing at ſeparate diſtances on the ſame plant; the flowers of both ſexes are of the open bell-ſhaped kind, of one leaf, and have empalements of the ſame form. The male flowers have three ſhort ſtamina, which are joined together at the top; theſe are crowned by ſlender ſummits. The female flowers reſt upon an oval germen, ſupporting a cylindrical ſtyle, crowned by three large ſtigma, which are gibbous; the germen afterward becomes an oblong fleſhy fruit, having five cells filled with compreſſed ſeeds, which are rounded at their extremity.

Dr. Linnæus joins this genus to the Gourd, but whoever will allow the fruit to be a characteriſtic in determining the genera, muſt keep them ſeparate; for the Gourd hath but three cells, whereas the Anguria has five.

This genus is ranged in the tenth ſection of Linnæus's twenty-firſt claſs of plants, entitled Moncœcia Syngeneſia, from the flowers being male and female in the ſame plant, and the ſtamina and ſummits growing together.

We have but one SPECIES of this genus, viz.

ANGURIA foliis multipartitis. *Water Melon with leaves cut into many parts.* Anguria Citrullus dicta. C. B. P. 312. Of this there are ſeveral varieties which differ in the form and colour of their fruit; but as theſe vary annually from ſeeds, it is needleſs to enumerate them here.

This fruit is cultivated in Spain, Portugal, Italy, and moſt other warm countries in Europe; as alſo in Africa, Aſia, and America, and is by the inhabitants of thoſe countries greatly eſteemed for their wholſome cooling quality; but in England the fruit is not ſo univerſally eſteemed, though ſome few perſons are very fond of them. I ſhall therefore give full directions for raiſing them, ſo that ſuch perſons as are willing to be at the expence and trouble of it, may not be at a loſs for inſtructions.

Firſt provide ſome ſeeds, which ſhould be three or four years old; for new ſeeds are apt to produce vigorous plants, which are ſeldom ſo fruitful as thoſe of a moderate ſtrength. The beſt ſorts to cultivate in England, are thoſe with ſmall round fruit, which come from Aſtracan, thoſe with very large fruit, ſeldom ripen well in this climate. Having provided good ſeed, you ſhould prepare a heap of new dung the beginning of February, which ſhould be thrown in a heap for about twelve days to heat, turning it over twice, mixing it well; then you ſhould make a hot-bed, in which theſe ſeeds, as alſo Cucumber-ſeeds and Muſk Melons may be ſown. The dung ſhould be well wrought in making the bed, and muſt be beaten down pretty cloſe with a dung-fork, that the heat may not be too violent, and of longer continuance. When the dung is thus laid, you ſhould cover it about four inches thick with good light earth, and having ſpread it very even, you ſhould put the frame and glaſs over it, leaving it to warm four or five days before you put the ſeeds into it, obſerving, if the ſteam riſes pretty much, to raiſe up the glaſs to let it paſs off: then, if you find your bed in proper temper, you may ſow your ſeeds therein in drills, covering them over with earth about half an inch. After this,

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this, if you find your bed very warm, you muſt give air in the day-time by raiſing the glaſſes; but if the bed is cool, you muſt cover it well with mats every night, as alſo in bad weather. In four or five days after, you muſt prepare another hot-bed to receive theſe plants, which will be fit to tranſplant in ten days, or a fortnight at moſt, after the ſeeds are ſown; this bed need not be very large, for a few of theſe plants will fill a large quantity of frames, when they are planted out for good, and while the plants are young, there may be a great quantity kept in one light; ſo that thoſe perſons who raiſe early Cucumbers and Muſk Melons, may alſo raiſe theſe plants in the ſame bed; for two or three lights will be ſufficient to raiſe plants of all three kinds, to ſupply the largeſt families, until they are planted out for good. In the management of theſe plants while young, there is little difference from the directions given for raiſing Muſk Melons, therefore I need not repeat it here. The chief thing to be obſerved, is, to let them have a large ſhare of air whenever the weather will permit, otherwiſe the plants will draw up weak, and be good for little. As theſe plants will require two or three hot-beds to bring the fruit to perfection, it will be the better way to put the plants into baſkets, when they have gotten four leaves, as is directed for raiſing early Cucumbers; but you ſhould not plant more than two plants in each baſket, for if one of them lives it will be ſufficient; therefore when both the plants ſucceed, you ſhould draw out the weakeſt and moſt unpromiſing of them, before they begin to put out their ſide ſhoots, otherwiſe they will entangle and render it difficult to be performed, without greatly injuring the remaining plant.

The baſkets in which theſe plants are to be planted, need not be more than a foot diameter; ſo that one light will contain eight of them, which will be ſufficient for twenty-four lights, when they are planted out for good; for where the plants are vigorous, one ſingle plant will ſpread ſo far as to fill three lights; and if they have not room, they ſeldom ſet their fruit well.

Theſe baſkets may remain in the nurſery-beds until the plants have ſpread, and put out many runners; for when the heat of this bed declines, it is ſoon revived by adding a proper lining of warm dung to the ſides of the bed quite round; ſo that when they are taken out of this bed, and placed in the ridges where they are to remain, the heat of the beds will laſt ſo long as to ſet their fruit, which is of great conſequence; for when the plants are ridged out very young, the beds are generally made of great thickneſs in dung, in order to continue their heat; ſo that for ſome time after they are made, they are ſo extreme hot, as to endanger the ſcalding of the plants; and by the time the fruit begins to appear, there is little heat left in the beds, which often occaſions the fruit to drop off, and come to nothing.

After theſe plants are placed in the beds where they are to remain, you muſt carefully lead the ſhoots as they are produced, ſo as to fill each part of the frame, but not to croud each other; and be careful to keep them clear from weeds, as alſo to admit freſh air whenever the weather will permit; they muſt alſo be frequently watered, but do not give it them in great quantities. In ſhort, there is little difference to be obſerved in the management of theſe, from that of Muſk Melons, but only to give them more room, and to keep the beds to a good temperature of heat, and when the fruit appears, to admit air freely to the plants, in order to ſet their fruit; but when the nights are cold, the glaſſes muſt be covered with mats to keep the beds warm, without which this fruit will ſeldom come to good in this country.

ANIL. See INDIGOPHERA.

ANISUM, or ANISE. See PIMPINELLA.

ANNONA. Lin. Gen. Plant. 613. Guanabanus. Plum. Nov. Gen. 10. *The Cuſtard Apple, &c.*

The CHARACTERS are,

The empalement is compoſed of three ſmall heart-ſhaped leaves, which are concave and pointed. The flower hath ſix petals, three large and three alternately ſmaller. The ſtamina is ſcarce diſcernible, but there are many ſummits on each ſide the germen, which is ſituated at the bottom of the flower, having no ſtyle, but an obtuſe ſtigma. The germen afterward becomes an oval, or oblong fruit, having a ſcaly rind, and one cell, in which are lodged many oval ſmooth ſeeds.

This genus of plants is ranged in the ſeventh ſection of Linnæus's thirteenth claſs, entitled Polyandria Polyginia, the flowers of this diviſion having many ſtamina and ſeveral germen.

The SPECIES are,

1. ANNONA (*Reticulata*) foliis lanceolatis fructibus ovatis reticulato-areolatis. Lin. Sp. Plant. 537. *Annona with ſpear-ſhaped leaves, and oval fruit which are netted, or wrought in ſquares.* Guanabanus fructu aureo & molliter aculeato. Plum. Nov. Gen. 43. *The Cuſtard Apple.*
2. ANNONA (*Muricatis*) foliis ovali-lanceolatis glabris nitidis planis pomis muricatis. Hort. Cliff. 222. *Annona with plain, ſmooth, ſhining, oval, ſpear-ſhaped leaves, and a prickly fruit.* Guanabanus fructu è viridi luteſcente molliter aculeato. Plum. Nov. Gen. 43. *The Sour Sop.*
3. ANNONA (*Squamoſa*) foliis oblongis fructibus obtusè ſubſquamatis. Lin. Sp. Plant. 537. *Annona with oblong leaves, and obtuſe ſcaly fruit.* Guanabanus foliis odoratis fructu ſubrotundo ſquamoſo. Plum. Nov. Gen. 43. *The Sweet Sop.*
4. ANNONA (*Paluſtris*) foliis oblongis obtuſis glabris, fructu rotundo, cortice glabro. *Annona with oblong, blunt, ſmooth leaves, and round fruit, with a ſmooth ſkin.* Guanabanus paluſtris fructu lævi viridi. Plum. Nov. *The Water Apple.*
5. ANNONA (*Cherimola*) foliis latiſſimis glabris, fructu oblongo ſquamato, ſeminibus nitidiſſimis. *Annona with very broad ſmooth leaves, oblong ſcaly fruit, and very ſhining ſeeds.*
6. ANNONA (*Africana*) foliis ovato-lanceolatis pubeſcentibus fructu glabro ſubcæruleo. *Annona with oval, ſpear-ſhaped, downy leaves, and ſmooth bluiſh fruit.* Guanabanus fructu ſubcæruleo. Plum. Nov. Gen. 43. *The Sweet Apple.*
7. ANNONA (*Aſiatica*) foliis lanceolatis glabris nitidis ſecundum nervos ſulcatis. Hort. Cliff. 222. *Annona with neat ſpear-ſhaped leaves, with nervous furrows.* Guanabanus fructu purpureo. Plum. Nov. Gen. 43. *The Purple Apple.*
8. ANNONA (*Triloba*) foliis lanceolatis fructibus trifidis. Lin. Sp. Plant. 537. *Annona with ſpear-ſhaped leaves, and trifid fruit.* Annona fructu luteſcente lævi ſerotum arietis referente. Cateſb. Car. 2. 85. *The North American Annona, called by the inhabitants Papaw.*

The firſt ſort uſually grows to the height of twenty-five feet, or upwards, in the Weſt-Indies, and is well furniſhed with branches on every ſide; the bark is ſmooth, and of an Aſh colour; the leaves are oblong, of a light green colour, and have ſeveral deep tranſverſe ribs or veins, ending in acute points; the fruit is of a conical form, as large as a tennis-ball, of an Orange colour when ripe, having a ſoft, ſweet, yellowiſh pulp, of the conſiſtence of a cuſtard, from whence the title of Cuſtard Apple was given to it.

The ſecond ſort is not ſo large as the firſt, rarely riſing above twenty feet high, and not ſo well furniſhed with branches; the leaves are broader than thoſe, have a ſmooth ſurface without any furrows, and are of a ſhining green colour; the fruit is large, of an oval ſhape, irregular, and pointed at the top, being of a greeniſh yellow colour, and full of ſmall knobs on the outſide; the pulp is ſoft, white, and of a ſour and ſweet taſte intermixed, having many oblong dark-coloured ſeeds.

The third ſort is a tree of humbler growth, ſeldom riſing more than fifteen feet high, and is well furniſhed with branches on every ſide; the leaves of this ſort have an agreeable ſcent when rubbed; the fruit is roundiſh and ſcaly, and when ripe turns of a purple colour, and hath a ſweet pulp.

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The fourth ſort commonly grows from thirty to forty feet in the Weſt-Indies. This hath oblong pointed leaves, which have ſome ſlender furrows, and when rubbed have a ſtrong ſcent; the fruit of this ſort is ſeldom eaten but by the negroes; the tree grows in moiſt places in all the iſlands of the Weſt-Indies.

The fifth ſort is much cultivated in Peru for the fruit, and from thence the ſeeds have been brought to England, and many plants have been raiſed. This grows to be a very large tree in the natural country of its growth, and is well furniſhed with branches, which are garniſhed with leaves of a bright green colour, which are much larger than thoſe of any of the other ſorts. The fruit is oblong and ſcaly on the outſide, and of a dark purple colour when ripe; the fleſh is ſoft and ſweet, has many brown ſeeds intermixed, which are very ſmooth and ſhining; the fruit is eſteemed by the Peruvians as one of their moſt delicate ſorts. This has produced flowers in England, but no fruit.

The ſixth and ſeventh ſorts grow in ſome of the French iſlands, as alſo in Cuba, in great plenty; theſe grow to the height of thirty feet or more; their fruit are eſteemed by the inhabitants of thoſe iſlands, who frequently give them to ſick perſons, as they reckon them very cooling and wholeſome.

The eighth ſort grows plentifully in the Bahama-iſlands, where it ſeldom riſes to more than ten feet high, having ſeveral ſtems; the fruit of this ſort are ſhaped like a Pear inverted. This is ſeldom eaten but by the negroes, and is the food of guanas, and other animals.

This ſort will thrive in the open air in England, if it is planted in a warm ſheltered ſituation; but the plants ſhould be trained up in pots, and ſheltered in winter for two or three years, until they have acquired ſome ſtrength; then they may be turned out of the pots in the ſpring, and planted in the full ground, where they are to remain. This ſort has produced flowers in the curious garden of his grace the duke of Argyle, at Whitton, near Hounſlow, where it has been growing in the open air for ſome years, as alſo in the nurſery of the late Mr. Gray, near Fulham. The ſeeds of this ſort are frequently brought to England from North America, which are much larger than thoſe of the other ſpecies, and many plants have been lately raiſed in the gardens near London. The ſhape of the leaves is alſo different; this caſts its leaves in autumn, whereas all the others retain their leaves, never caſting them until the ſpring, when the leaves come out. The fruit is very different from thoſe of the other ſpecies, two or three growing together at their foot-ſtalks. When the ſeeds of this ſort are ſown, they frequently remain a whole year in the ground; therefore the earth in the pots ſhould not be diſturbed, where they are ſown, if the plants do not come up the firſt year; and the pots ſhould be ſheltered in winter, and the following ſpring if they are plunged into a new hot-bed, the plants will come up much ſooner than thoſe which are ſown in the open air, ſo will have more time to get ſtrength before the winter.

All the other ſorts which are natives of the warm parts of America, are to otender to live in this country, if they are not preſerved in warm ſtoves; they come up very eaſily from the ſeeds which are brought from America, if they are freſh; but theſe ſeeds muſt be ſown on a good hot-bed, or in pots of light earth, and plunged into a hot-bed of tanners bark in February, which is by much the beſt time; becauſe when the plants come up early, they will have time to get ſtrength before the cold weather comes on in the autumn.

Theſe plants ſhould be kept in the bark-ſtove, and carefully managed, with which they will make great progreſs; but in warm weather they ſhould have plenty of freſh air admitted to them, for when the air is excluded from them too much, they are apt to grow ſickly, and are often attacked by vermin, which will multiply and ſpread over the whole ſurface of the

leaves, and cauſe them to decay; but when carefully managed, their leaves will continue green all the winter, and make a very good appearance in the ſtove at that ſeaſon.

As theſe plants advance in their growth, they ſhould be ſhifted into larger pots; but this muſt be done with caution, for nothing is more prejudicial to them than over-potting them. They muſt alſo conſtantly remain in the tan-bed, otherwiſe they will make but little progreſs; for although they will live in a dry ſtove, yet they will make little progreſs, nor will their leaves appear ſo fine, as when they are preſerved in a vigorous growing ſtate; and it is more for the beauty of their leaves, than any hopes of their producing fruit in this country, that they are preſerved in ſtoves: for though there has been ſome of the ſorts which have produced flowers in England, yet none have ever ſhewn their fruit here.

Some of theſe plants are twelve or fourteen feet high in our gardens, and a few years ago there were plants of the fifth ſort in the garden at Chelſea, which were more than twenty feet high, and produced flowers two or three years. The ſtove in which theſe plants are placed, ſhould, during the winter ſeaſon, be kept to the Ananas heat, marked on the botanical thermometers. The earth ſhould be light and rich in which they are planted, and the tan-bed ſhould be frequently turned over and refreſhed. Their waterings muſt be frequent in ſummer, but not in too great quantity. In the winter they muſt have it but ſeldom, a little once a week in open weather, and, in froſt, once in a fortnight or three weeks, will be ſufficient.

ANTHEMIS. Lin. Gen. Plant. 870. Chamomile.

The CHARACTERS are,

It is a plant with a compound flower, whoſe common empalement is hemiſpherical, compoſed of many ſcales which are equal. The border, or rays of the flower, is compoſed of many female florets, whoſe petals are ſtretched out like tongues on one ſide, and are indented in three parts at their extremity. The middle, or diſk of the flower, is compoſed of many hermaphrodite florets, which are funnel-ſhaped, erect, and cut into five parts at the top. Theſe have five ſhort narrow ſtamina, which are crowned by cylindrical hollow ſummits. The germen is ſituated at the bottom, ſupporting a ſlender ſtyle, crowned by two reflexed ſtigma, which afterward becomes an oblong naked ſeed. The female florets have no ſtamina, but an oblong germen in the center, ſupporting two inflexed ſtyles.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, entitled Syngeneſia Polygamia ſuperflua, the flowers of this ſection being compoſed of many florets, which are female and hermaphrodite, whoſe ſtamina are joined at the top.

The SPECIES are,

1. ANTHEMIS (*Nobilis*) foliis pinnato-compoſitis linearibus acutis ſubvilloſis. Lin. Sp. Plant. 894. *Chamomile with winged leaves, compoſed of many very narrow-pointed hoary ſegments.* Chamæmelum nobile ſive Leucanthemum odoratius. C. B. P. 135. *Common, or noble Chamomile.*
2. ANTHEMIS (*Arvenſis*) receptaculis conicis paleis ſetaceis ſeminibus coronato-marginatis. Flor. Suec. 704. *Chamomile with a conical receptacle of briſtly chaff, and bordered ſeeds.* Chamæmelum inodorum. C. B. P. 136. *May Weed.*
3. ANTHEMIS (*Cotula*) receptaculis conicis paleis ſetaceis ſeminibus nudis. Lin. Sp. Plant. 894. *Chamomile with a conicle receptacle, briſtly chaff, and naked ſeeds.* Chamæmelum fœtidum. C. B. P. 135. *May Weed.*
4. ANTHEMIS (*Cota*) florum paleis rigidis pungentibus. Flor. Leyd. 172. *Chamomile with ſtiff pungent chaff between the florets.* Chamæmelum annuum ramoſum cotulæ fœtidæ floribus amplioribus capitulis ſpinoſis. Mor. Hiſt. 3. p. 36.
5. ANTHEMIS (*Altiſſima*) erecta foliorum apicibus ſubſpinoſis. Lin. Sp. Plant. 893. *Upright Chamomile with leaves ending with ſpines.* Chamæmelum Leucanthemum Hiſpanicum magno flore. C. B. P. 135.
6. ANTHEMIS (*Maritima*) foliis pinnatis dentatis carnoſis nudis punctatis caule proſtrato, calycibus ſubtomentoſis.

mentoſis. Lin. Sp. Plant. 893. *Chamomile with fleſhy pinnated leaves, and a branching trailing ſtalk.* Chamæmelum maritimum. C. B. P. 134.

7. ANTHEMIS (*Tomentoſa*) foliis pinnatifidis obtuſis planis, pedunculis hirſutis, folioſis calycibus tomentoſis. Hort. Cliff. 415. *Chamomile with plain blunt leaves, winged at their extremity, hairy foot-ſtalks, and a leafy woolly empalement.* Chamæmelum maritimum incanum folio abſinthii craſſo. Boerh. Ind. 1. p. 110.

8. ANTHEMIS (*Mixta*) foliis ſimplicibus dentato-laciniatis. Lin. Sp. Plant. 894. *Chamomile with ſingle, indented, cut leaves.* Chamæmelum Luſitanicum latifolium ſive Coronopi folio. Breyn. Cent. 1. 49.

9. ANTHEMIS (*Pyrethrum*) caulibus unifloris decumbentibus foliis pinnato-multifidis. Lin. Hort. Cliff. 414. *Chamomile with ſingle flowers on the ſtalks lying on the ground, and winged leaves.* Pyrethrum flore bellidis. C. B. P. 148. *Pellitory of Spain.*

10. ANTHEMIS (*Valentina*) caule ramoſo foliis pubeſcentibus tripinnatis, calycibus villoſis pedunculatis. Hort. Cliff. 414. *Chamomile with a branching ſtalk, multifid hairy leaves, and hairy foot-ſtalks.* Buphthalmum cotulæ folio. C. B. P.

11. ANTHEMIS (*Tinctoria*) foliis bipinnatis ſerratis ſubtus tomentoſis, caule corymboſo. Lin. Sp. 1263. *Chamomile with ſawed winged leaves, woolly underneath, and flowers in a corymbus.* Buphthalmum Tanaceti minoris foliis. C. B. P. 134.

12. ANTHEMIS (*Arabica*) caule decompoſito calycibus ramiferis. Hort. Cliff. 413. *Chamomile with a decompound ſtalk, and a branching empalement.* Aſteriſcus annuus trianthophorus Craſſas Arabicus dictus. Shaw. Afr. 58.

The firſt ſort is the common Chamomile, which grows in plenty upon commons and other waſte land. It is a trailing perennial plant, which puts out roots from the branches as they lie on the ground, whereby it ſpreads and multiplies greatly; ſo that whoever is willing to cultivate this plant, need only procure a few of the ſlips in the ſpring, and plant them a foot aſunder, that they may have room to ſpread, and they will ſoon cover the ground. Formerly this plant was uſed for planting of walks, which, when mowed and rolled, looked well for ſome time, but as it was very ſubject to decay in large patches, the walks became unſightly, for which reaſon this was diſuſed. The flowers of this ſort are ordered for medicinal uſe, but the market people generally ſell the double flowers, which are much larger, but not ſo ſtrong as the ſingle. The double ſort is equally hardy, and may be propagated in the ſame manner.

The ſecond ſort is a common annual weed, which grows among corn; it flowers in May, ſo was called May Weed, though ſome have applied that title improperly to the Cotula fœtida, which rarely flowers till late in June.

The fourth, fifth, and eighth ſorts are annual plants, which grow naturally in Spain, Portugal, Italy, and the ſouth of France, from whence their ſeeds have been brought to England, where the plants are preſerved in botanic gardens for the ſake of variety. They riſe eaſily from ſeeds ſown in the ſpring, and require no other culture but to thin the plants where they are too cloſe, allowing them a foot and a half room each way, and clean them from the weeds. They flower in July, and their ſeeds ripen in September.

The ſixth and ſeventh ſorts are perennial plants, which grow naturally in Spain, Portugal, and Greece, from whence their ſeeds have been brought to England, and the plants are preſerved in ſome curious gardens for the ſake of variety. They are hardy and may be propagated by ſeeds, which ſhould be ſown in the ſpring upon poor land, where the plants will continue much longer than in good ground, and will require no other care but to keep them clean from weeds. Theſe plants do not grow tall, but are buſhy, ſo ſhould be allowed room to grow. Their flowers are white, and continue from July to October, and the ſeeds ripen in autumn.

The ninth ſort is the Pellitory of Spain, the roots of which are uſed for the tooth-ach, being extremely warm; when they are applied to the part affected, they draw out the cold rheum, and are often ſerviceable in this particular. This is a perennial plant, with a long taper root like that of a Carrot, which grows naturally in Spain and Portugal, from whence the roots are brought to England. The branches of this trail upon the ground, and ſpread a foot or more each way; theſe are garniſhed with fine winged leaves, like thoſe of the common Chamomile; at the extremity of each branch is produced one large ſingle flower, like Chamomile, but much larger, the rays of which are of a pure white within, but purple on their outſide. After the flowers are paſt, the receptacle ſwells to a large ſcaly cone; between theſe ſcales are lodged the ſeeds. It flowers in June and July, and the ſeeds are ripe in September; but unleſs the ſeaſon is dry, the ſeeds do not ripen in England, for the wet falls between the ſcales, and rots the ſeeds in embryo.

The eleventh ſort is a perennial plant, which is propagated by ſeeds; theſe may be ſown on a bed of common earth in the ſpring, and when the plants are ſtrong enough to remove, ſhould be tranſplanted into large open borders, near ſhrubs, where they may have room to grow, for they ſpread very wide, therefore require three feet diſtance from other plants; in theſe large open ſpots they will make a pretty variety from June to November, during which time they continue in flower: ſome of theſe are white, others are of a ſulphur, and ſome have yellow flowers, but theſe vary from ſeed; the eaſtern ſorts grow taller, and the flowers are larger than the common, but in other particulars they are the ſame, though many have ſuppoſed them different ſpecies.

The ſeeds of the twelfth ſort were brought from Africa by the late Dr. Shaw, which were diſtributed to many curious botaniſts in Italy, France, and England, where ſome of the plants were raiſed. This grows near two feet high, with an upright ſtem, having a ſingle flower at the top, from whoſe empalement there are two or three foot-ſtalks put out horizontally, about two inches long, each having a ſingle flower ſmaller than the firſt, like the Childing Marigold, or Hen and Chicken Daiſy. The ſeeds of this ſhould be ſown in autumn, and treated in the ſame manner as is before directed for ſome other ſorts, otherwiſe the ſeeds are ſeldom perfected in England.

ANTHERICUM. Lin. Gen. Plant. 380. Spiderwort.

The CHARACTERS are,

The flower hath no empalement, and is compoſed of ſix oblong blunt petals, which ſpread open. It hath ſix upright awl-ſhaped ſtamina, which are crowned by ſmall ſummits, having four furrows. The germen which is ſituated in the center is three-cornered, ſupporting a ſingle ſtyle which is as long as the ſtamina, crowned by a three-cornered blunt ſtigma. The germen afterward becomes an oval ſmooth capſule, having three furrows, opening in three cells, which are filled with angular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, entitled Hexandria Monogynia, from their flowers having ſix ſtamina and but one ſtyle.

The SPECIES are,

1. ANTHERICUM (*Revolutum*) foliis planis ſcapo ramoſo corollis revolutis. Lin. Sp. Plant. 310. *Anthericum with plain leaves, a branching ſtalk, whoſe petals turn backward.* Aſphodelus foliis compreſſis aſperis caule patulo. Tourn. Inſt. R. H. 343.
2. ANTHERICUM (*Ramoſum*) foliis planis ſcapo ramoſo corollis planis piſtillo recto. Lin. Sp. Plant. 310. *Anthericum with plain leaves, a branching ſtalk, and plain reflexed petals.* Phalangium parvo flore ramoſum. C. B. P. 29.
3. ANTHERICUM (*Liliago*) foliis planis ſcapo ſimpliciſſimo corollis planis, piſtillo declinato. Hort. Upſal. 83. *Anthericum with plain leaves, a ſingle ſtalk, and declining pointals.* Phalangium parvo flore non ramoſum. C. B. P. 29.

4. ANTHERICUM

4. ANTHERICUM (*Fruteſcens*) foliis carnoſis teretibus caule fruticoſo. Lin. Sp. Plant. 310. *Anthericum with fleſhy taper leaves, and a ſhrubby ſtalk.* Phalangium capenſe cauleſcens foliis cepitiis ſuccoſis. H. Elth. 310.
5. ANTHERICUM (*Aloeides*) foliis carnoſis ſubulatis planiuſculis. Hort. Upſal. 83. *Anthericum with fleſhy, plain, awl-ſhaped leaves.* Phalangium capenſe ſeſſile foliis aloeformibus pulpoſis. Hort. Elth. 123.
6. ANTHERICUM (*Aſphodeloides*) foliis carnoſis ſubulatis ſemiteretibus ſtrictis. Hort. Upſal. 83. *Anthericum with awl-ſhaped, fleſhy, half taper leaves, growing cloſe.* Bulbine acaulis foliis ſubulatis. Prod. Leyd. 33.
7. ANTHERICUM (*Annuum*) foliis carnoſis ſubulatis teretibus ſcapo ſubramoſo. Hort. Upſal. 83. *Anthericum with awl-ſhaped, fleſhy, taper leaves, and a branching ſtalk.* Aſphodelus Africanus anguſtifolius luteus minor. Tourn. Inſt. 343.
8. ANTHERICUM (*Altiſſimum*) acaule foliis carnoſis teretibus ſpicis florum longiſſimis laxis. Fig. Plant. pl. 39. *Tall African Spiderwort with taper fleſhy leaves, and very long looſe ſpikes of flowers.*
9. ANTHERICUM (*Oſſifragum*) foliis enſiformibus filamentis lanatis. Flor. Suec. 268. *Anthericum with ſword-ſhaped leaves, and downy ſtamina.* Aſphodelus luteus paluſtris. Dod. Pempt. 208.
10. ANTHERICUM (*Calyculatum*) foliis enſiformibus perianthiis trilobis filamentis glabris piſtillis trigynis. Flor. Suec. 269. *Anthericum with ſword-ſhaped leaves, an empalement with three lobes, ſmooth ſtamina, and three ſtyles.* Phalangium alpinum paluſtre, Iridis folio. Segu.

The firſt ſort grows naturally at the Cape of Good Hope; the roots of this are fleſhy, and compoſed of tubers joined at the crown like thoſe of the Aſphodel; the ſtalk riſes near two feet high, and branches out on each ſide, each branch being terminated by a looſe ſpike of flowers, which are white, and the petals are turned backward to their foot-ſtalk. The leaves of this ſort are flat, and the root is perennial, but the ſpikes decay in autumn.

The ſecond ſort hath a perennial root; the ſtalks of this riſe about the ſame height as the former, ſending out many lateral branches in like manner, which are terminated by looſe ſpikes of flowers, which are white, but the petals are plain, and do not turn back as in the other ſort.

The third ſort hath plain leaves and an unbranching ſtalk, in which it chiefly differs from the former. The root of this is perennial.

The two next ſorts grow naturally in Spain, Portugal, and other warm countries, and were more common ſome years ago in the Engliſh gardens than at preſent; for the ſevere winter in 1740, killed moſt of their roots. Theſe flower in June and July, and their ſeeds are ripe in September. They are propagated by ſeeds, which ſhould be ſown in autumn; for thoſe which are ſown in the ſpring, never come up the ſame year, but remain in the ground till the following ſpring, or often miſcarry. Theſe ſhould be ſown in a bed of light ſandy earth, in a warm ſituation, and when the plants come up, they muſt be kept clean from weeds during the ſummer; and in autumn, when their leaves decay, they ſhould be carefully taken up, and tranſplanted into a bed of light earth, at a foot diſtance from each other. If the winter ſhould prove ſevere, the bed ſhould be covered with ſtraw, Peaſe-haulm, or ſuch light covering, to keep out the froſt; or if ſome old tan from a hot-bed is ſpread over the ground, it will prevent the froſt from penetrating the ground, and will preſerve the roots. In this bed they may remain one year, by which time they will be ſtrong enough to flower; therefore the following autumn they ſhould be carefully taken up, ſo as not to break their roots, and planted in the borders of the flower-garden, where they will laſt ſeveral years, if they are not killed by froſt; to prevent which, ſome rotten tan ſhould be laid over the roots in winter, which will always ſecure them.

The fourth ſort has been long preſerved in many gardens near London, and was formerly known among the gardeners by the title of Onion-leaved Aloe. This plant produces many ligneous branches from the root, each ſupporting a plant with long taper leaves, in ſhape of thoſe of the Onion, which are full of a yellow pulp very juicy. Theſe plants ſend out roots, which run down and faſten themſelves into the earth, by which they multiply greatly. The flowers are produced on long looſe ſpikes, are yellow, and appear at different times, ſo that the plants are not long deſtitute of flowers. Theſe are ſucceeded by round ſmooth ſeed-veſſels, which have three cells, filled with triangular ſeeds; but as the plant multiplies ſo faſt by offsets, the ſeeds are little regarded. It grows naturally at the Cape of Good Hope, and requires a little ſhelter in winter; but in ſome mild ſeaſons I have had plants live without any cover, which were planted cloſe to a warm wall.

The fifth and ſixth ſorts grow cloſe to the ground, never riſing with any ſtalk. The fifth hath broad, flat, pulpy leaves, reſembling thoſe of ſome ſorts of Aloe, ſo was formerly by gardeners called Aloe with flowers of Spiderwort. The leaves ſpread open; the flowers are produced on looſe ſpikes, like the former, but are ſhorter: the flowers are yellow, and appear at different ſeaſons. This is produced by offsets, which are put out in plenty, and muſt be planted in pots filled with light ſandy earth, and in winter placed in the green-houſe, and treated as other hardy ſucculent plants, which come from the Cape of Good Hope, where this plant grows naturally. It muſt be kept pretty dry in winter, and if it is ſcreened from froſt, it will require no artificial warmth.

The ſixth ſort hath long, narrow, pulpy leaves, which are almoſt taper, but flatted on their upper ſide; this ſends out many offsets, by which it may be increaſed plentifully. The flowers are yellow, and grow on long looſe ſpikes, as the former; theſe appear at different ſeaſons; thoſe of the ſpring and ſummer are ſucceeded by ſeeds in great plenty, ſo may be eaſily propagated thereby, which ripen very well. It muſt be treated in the ſame manner as the former.

The ſeventh ſort is annual: this is a low plant growing cloſe to the ground, having pretty long ſucculent leaves which are taper, but flatted on their upper ſide; the flowers grow in looſe ſpikes, which are ſhorter than either of the other ſorts. They are yellow, and ſucceeded by round ſeed-veſſels, like thoſe of the former ſorts; the plants periſh ſoon after their ſeeds ripen. The ſeeds of this ſort ſhould be ſown on a warm border of light earth in April, where they are to remain; and when the plants come up, they will require no other care but to keep them clean from weeds, and to thin them where they are too cloſe. This ſort flowers in July, and the ſeeds ripen in October.

The eighth ſort never riſes to a ſtalk, but the leaves come out cloſe to the ground. Theſe are long, taper, ſucculent, and of a ſea-green colour, growing erect; the flower-ſtems riſe between the leaves, and are near three feet long; the upper half being thinly garniſhed with yellow flowers, ſhaped like thoſe of the other ſpecies. Theſe appear at different ſeaſons, ſo that the plants are ſeldom long deſtitute of flowers. This ſort doth not ſend out offsets ſo freely as ſome of the others; but as it produces ſeeds annually, it may be had in plenty. It muſt be treated in the ſame manner as the fourth, fifth, and ſixth ſorts.

The ninth and tenth ſorts grow naturally on bogs in moſt of the northern countries; the tenth is common in many parts of England, but particularly in Lancaſhire, from whence it had the title of Lancaſhire Aſphodel; it alſo grows on a bog upon Putney-heath. The other grows naturally in Denmark, Sweden, and Lapland. Theſe are both low plants, having narrow leaves, which grow cloſe to the ground; the flower-ſtems riſe about ſix inches high, being terminated by a looſe ſpike of ſmall yellow flowers. Theſe differ from each other, the ſtamina of the tenth being woolly, whereas thoſe of the other are ſmooth. Theſe

plants, growing naturally upon bogs, are with difficulty preſerved in gardens.

ANTHERÆ [from Ἀνθηρὸς flowery,] are the ſummits or little tops in the middle of a flower, ſupported by the ſtamina.

ANTHOLOGY [of Ἄνθος, a flower, and λόγος, *Gr.* a word,] a diſcourſe or treatiſe of flowers.

ANTHOLYZA. We have no Engliſh name for this plant.

The CHARACTERS are,

It hath an imbricated ſheath growing alternate, which is permanent; the flower is of one leaf, tubulous, and opens above with compreſſed jaws. The upper lip is ſlender, long, erect, and waved; the two jaws are ſhort, and joined at their baſe; the under lip is trifid, ſhort, and the middle ſegment turns downward; it hath three long ſlender ſtamina, two of which are under the upper lip, and the other lies in the under lip; theſe are crowned by pointed ſummits. Under the flower is ſituated the germen, ſupporting a ſlender ſtyle the length of the ſtamina, which is crowned by a ſlender, trifid, reflexed ſtigma. The germen afterward becomes a roundiſh three-cornered veſſel having three cells, in which are lodged many triangular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's third claſs, entitled Triandria Monogynia, the flowers having three ſtamina and one ſtyle.

The SPECIES are,

1. ANTHOLYZA (*Ringens*) corolla labiis divaricatis fauce compreſſo. Lin. Sp. Plant. 54. *Antholyza whoſe flower-lips ſpread aſunder.* Gladiolus floribus rictum referens coccineus ſuprema lacinia erecta & fiſtuloſa. Breyn. 21.
2. ANTHOLYZA (*Spicata*) foliis linearibus ſulcatis floribus albis uno verſu diſpoſitis. Fig. Plant. pl. 40. *Antholyza with narrow furrowed leaves, and white flowers ranged on one ſide of the ſtalk.*

The firſt ſort hath round, red, bulbous roots, from which ariſe ſeveral rough furrowed leaves, near a foot long, and half an inch broad; between theſe comes out the flower-ſtem immediately from the root, which riſes two feet high, is hairy, and hath ſeveral flowers coming out on each ſide. Theſe are of one leaf, cut into ſix unequal parts at the top: one of theſe ſegments is ſtretched out much beyond the other, ſtanding erect; the margins are waved and cloſed together, wrapping up the three ſtamina. The flowers are red, and appear in June, and the ſeeds ripen in September.

The roots of the ſecond ſort are in ſhape and ſize like thoſe of the Vernal Crocus, but the outer ſkin is thin and white; from this ariſes five or ſix long narrow leaves, which are deeply furrowed. Between theſe ariſe the flower-ſtem, which is a foot and a half high, bending on one ſide toward the top, where the flowers come out, ranged on one ſide, ſtanding erect. Theſe have each a ſpatha or ſheath, of one leaf, divided into two, ending in points, which are permanent. The flower is of one leaf, having a long tube, but is divided into ſix unequal ſegments at the top, which ſpread open, their margins being waved and turned inward. The three ſtamina riſe under the upper ſegment, which is larger than the others, and below is ſituated the trifid ſtyle, crowned with purple ſtigma. After the flower is paſt, the germen becomes a three-cornered ſeed-veſſel, opening in three cells, which are filled with triangular ſeeds. The flowers of this ſort are white, appear in May, and the ſeeds ripen in Auguſt.

Theſe plants are natives of Africa, from whence their ſeeds have been obtained, and were firſt raiſed in the Dutch gardens, where one of the ſorts has long been an ornament in the curious gardens of that country.

They are propagated by offſets, which the bulbous roots ſend forth in pretty great plenty; or by ſeeds, which are ſometimes perfected in Europe. Theſe ſeeds ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till the following ſpring, they often miſcarry, or at leaſt remain a year in the ground before they grow. If the ſeeds are ſown in pots of light earth, and plunged into an old bed of tan which has loſt its heat, and ſhaded in the middle of the day in hot weather, the ſeeds will come up the following winter; therefore they muſt be kept covered with glaſſes to ſcreen them from cold, otherwiſe the young plants will be deſtroyed. Theſe may remain in the pots two years, if the plants are not too cloſe, by which time they will have ſtrength enough to be planted each into a ſeparate ſmall pot filled with light earth. The time for tranſplanting of theſe roots is in July or Auguſt, when their leaves are decayed. In ſummer the pots may be placed in the open air, but in winter they muſt be removed, and placed under a hot-bed frame, for they are not very tender; but where any damp ariſes, it is very apt to occaſion a mouldineſs upon their leaves. The roots ſhoot up in autumn, and the flowers begin to appear in May; the ſeeds ripen in Auguſt, and ſoon after their leaves and ſtalks decay; when the roots may be taken up, and kept ſix weeks or two months out of the ground, ſo may be eaſily tranſported from one country to another at that time. Theſe flowers are ornamental when they appear, and they are plants which require but little culture, ſo deſerve a place in every good garden.

ANTHOSPERMUM, Amber-tree, vulgò.

The CHARACTERS are,

It is male and female in different plants; the male flowers have no petals, but a coloured empalement of one leaf, which is cut into four parts almoſt to the bottom. Out of the bottom ariſes four ſlender ſtamina, crowned with oblong ſquare ſummits, having a deep furrow through their middle. The female flowers have the ſame ſtructure as the male, but have no ſtamina; inſtead of which, there is an oval germen, ſituated in the bottom, ſupporting two recurved ſtyles crowned with a ſlender ſtigma. The germen afterward becomes a roundiſh capſule having four cells, which contain ſeveral angular ſeeds.

Dr. Linnæus has ranged this genus in his twentieth claſs of plants, but it properly belongs to his twenty-ſecond, becauſe the plants are male and female in different plants; whereas thoſe of his twenty-third, have male, female, and hermaphrodite flowers on the ſame plant.

ANTHOSPERMUM (*Æthiopicum*) foliis lævibus. Hort. Cliff. 455. *Amber-tree with ſmooth leaves.*

This plant has been long known in the curious gardens, under the title of Frutex Africanus, ambram ſpirans, or *Amber-tree.*

It is preſerved in moſt curious gardens which have collections of tender plants, and is eaſily propagated by planting cuttings during any of the ſummer months, in a border of light earth; which will take root in ſix weeks time, provided they are watered and ſhaded as the ſeaſon may require: or if theſe cuttings are planted in pots, and plunged into a very moderate hot-bed, they will take root ſooner, and there will be a greater certainty of their growing. Afterward they ſhould be taken up, with a ball of earth to their roots, and planted into pots filled with light ſandy earth, and may be expoſed to the open air until October; at which time they ſhould be removed into the conſervatory, where they ſhould be placed as free as poſſible from being over-hung with other plants; and, during the winter ſeaſon, they muſt be refreſhed with water, but ſhould not have too much given them each time; and ſhould have as much air admitted to them as the weather will permit, for if they are kept too cloſe, they will be ſubject to grow mouldy, and generally decay ſoon after; ſo that if the green-houſe is damp, it will be difficult to preſerve theſe plants through the winter.

The beauty of this ſhrub is in its ſmall ever-green leaves, which grow as cloſe as heath; which being bruiſed between the fingers, emit a very fragrant odour. Theſe plants muſt be frequently renewed by cuttings, for the old plants are very ſubject to decay, ſeldom continuing above three or four years.

It is but of late years there have been any of the female plants in the gardens, for all thoſe which were formerly in the gardens, were the male, which being

propagated by cuttings had been continued, ſo that no ſeeds were ever produced in England till within a few years paſt, when I received ſome ſeeds from the Cape of Good Hope, from which I raiſed many plants of both ſexes, and a few among them with hermaphrodite flowers, which have produced ſeeds, from which many plants have been raiſed.

ANTHYLLIS. Lin. Gen. Plant. 773. Vulneraria. Tourn. Barba Jovis. Tourn. *Ladies Finger, or Kidney Vetch.*

The CHARACTERS are,

It hath a ſwelling, hairy, permanent empalement of one leaf, which is divided at the top into five equal parts. The flower is of the butterfly kind, having a long ſtandard reflexed on both ſides beyond the empalement; the two wings are ſhort; the keel is of the ſame length, and compreſſed. There are ten ſtamina, which riſe together, and are crowned by ſingle ſummits. In the center is ſituated an oblong germen, ſupporting a ſingle ſtyle, crowned by a blunt ſtigma: the germen afterward becomes a ſmall roundiſh pod incloſed by the empalement; having one or two ſeeds.

This genus is ranged in Linnæus's ſeventeenth claſs of plants, entitled Diadelphia Decandria, the flowers having ten ſtamina joined in two bodies.

The SPECIES are,

1. ANTHYLLIS (*Tetraphylla*) herbacea foliis quaternopinnatis floribus lateralibus. Hort. Upſal. 221. *Herbaceous Kidney Vetch with winged leaves, having four lobes, and flowers growing from the ſide of the ſtalks.* Vulneraria pentaphyllos. Tourn. Inſt.
2. ANTHYLLIS (*Vulneraria*) herbacea foliis pinnatis inæqualibus capitulo duplicato. Lin. Sp. Plant. 719. *Kidney Vetch with unequal winged leaves and double heads.* Vulneraria ſupina flore coccineo. Raii Syn. Ed. 3. p. 325.
3. ANTHYLLIS (*Ruſtica*) herbacea foliis pinnatis inæqualibus foliolis caulinis lineari lanceolatis floribus capitatis ſimplicibus. *Herbaceous Kidney Vetch with unequal winged leaves, whoſe lobes are narrow, ſpear-ſhaped, and ſingle heads of flowers, called Ladies Fingers.* Vulneraria ruſtica. J. B. II. p. 362.
4. ANTHYLLIS (*Montana*) herbacea foliis pinnatis æqualibus capitulo terminali ſecundo, floribus obliquatis. Lin. Sp. Plant. 719. *Herbaceous Woundwort with equal winged leaves, terminated by the head of flowers, which are oblique.* Aſtragalus purpureus. Dalechampii 1347. *Purple Milk Vetch.*
5. ANTHYLLIS (*Cornicina*) herbacea foliis pinnatis inæqualibus capitulis ſolitaris. Lin. Sp. Plant. 719. *Herbaceous Woundwort, with unequal winged leaves, and a ſingle head of flowers.*
6. ANTHYLLIS (*Barba Jovis*) fruticoſa foliis pinnatis æqualibus floribus capitatis. Hort. Cliff. 371. *Shrubby Woundwort, with leaves equally winged, and flowers collected in a head.* Barba Jovis pulchrè lucens. J. B. I. p. 385. *Jupiter's Beard, or Silver Buſh.*
7. ANTHYLLIS (*Cytiſoides*) fruticoſa foliis ternatis inæqualibus calycibus lanatis lateralibus. Lin. Sp. Plant. 720. *Shrubby Woundwort, with three unequal leaves, and a downy flower-cup growing from the ſides.* Cytiſus incanus folio medio longiore. C. B. P. 390.
8. ANTHYLLIS (*Erinacea*) fruticoſa ſpinoſa foliis ſimplicibus. Lin. Sp. Plant. 720. *Shrubby prickly Woundwort, with ſingle leaves.* Geniſta Spartium ſpinoſum foliis lenticulæ floribus ex cæruleo purpuraſcentibus. C. B. P. 394.
9. ANTHYLLIS (*Hermanniæ*) fruticoſa, foliis ternatis ſubpedunculatis, calycibus nudis. Lin. Sp. Plant. 1014. *Shrubby Woundwort of Crete, with ternate leaves, and naked flower-cups.* Barba Jovis Cretica, linariæ folio, flore luteo parvo. Tourn. Cor. 44.
10. ANTHYLLIS (*Heterophylla*) fruticoſa, foliis pinnatis, floralibus ternatis. Lin. Sp. Plant. 1013. *Shrubby Woundwort of Portugal, with winged leaves, but thoſe near the flowers ternate.* Barba Jovis minor Luſitanica, flore minimo variegato. Tourn. Inſt. 651.

The firſt ſort grows naturally in Spain, Italy, and Sicily. This is an annual plant, with trailing branches, which ſpread flat on the ground; the leaves grow by fours at each joint, and the flowers come out in cluſters on the ſides of the ſtalks, having large ſwelling empalements, out of which the extreme parts of the petals do but juſt appear; theſe are of a yellow colour, and are ſucceeded by ſhort pods incloſed in the empalement. It flowers in June and July, and the ſeeds ripen in September. The ſeeds of this ſort ſhould be ſown on a bed of light earth in April, where the plants are to remain, and will require no other care, but to thin them to the diſtance of two feet, and keep them clean from weeds.

The ſecond ſort grows naturally in Spain and Portugal, from both which countries I have received the ſeeds; it alſo grows wild in Wales, and the iſle of Man. This is a biennial plant, having ſingle leaves at bottom, which are oval and hairy; but thoſe which grow out of the ſtalks are winged, each being compoſed of two or three pair of lobes terminated by an odd one: the flowers grow collected into heads at the top of the ſtalks, theſe are of a bright ſcarlet colour, ſo make a pretty appearance: it flowers in June and July, and the ſeeds ripen in October. When the plants of this ſort grow on poor land, they will ſometimes continue three years, but in gardens they ſeldom laſt longer than two.

The third ſort grows naturally upon chalky grounds in many parts of England, ſo is rarely admitted into gardens. Dr. Linnæus ſuppoſes this and the former ſort to be the ſame, but from having cultivated theſe for many years, I can affirm they are different ſpecies, never altering from ſeed. The leaves of this ſort are much narrower than thoſe of the former, and have generally one or two pair of lobes more in each. The heads of flowers in this ſpecies are ſingle, whereas the other has generally double heads; add to theſe, the root being perennial, which makes an eſſential difference between them.

The fourth ſort is a perennial plant with trailing branches, garniſhed with winged leaves, which have an equal number of hairy lobes at the extremity of the branches; the flowers are produced in heads, theſe are of a purple colour, and globular form. This ſort grows naturally on mountains in the ſouth of France and Italy, from whence I have received the ſeeds. It is propagated by ſeeds, which may be ſown either in the autumn or ſpring: thoſe which are ſown in the autumn, will riſe the following ſpring, and more certainly grow, than thoſe which are ſown in the ſpring, which ſeldom grow the ſame year. When the plants come up, they muſt be kept clean from weeds; and where they are too cloſe together, they muſt be thinned. The following autumn, they ſhould be tranſplanted to the places where they are to remain, and will require no particular management afterward. This ſort flowers in June and July, and the ſeeds ripen in October.

The fifth ſort approaches near to the third, but the leaves are hoary, and the flowers are produced on the ſide of the branches; theſe are yellow, and collected into ſmall heads. It is an annual, or at moſt a biennial plant; for when it flowers early in the ſummer, it commonly decays ſoon after the ſeeds are ripe; whereas thoſe plants which flower later in the ſeaſon, and do not perfect ſeeds, will abide another year. This may be propagated by ſeeds, in the ſame manner as the former.

The ſixth ſort is the Barba Jovis, or Jupiter's Beard, by many called Silver Buſh, from the whiteneſs of its leaves. This is a ſhrub which often grows ten or twelve feet high, and divides into many lateral branches, garniſhed with winged leaves, compoſed of an equal number of narrow lobes, which are very white and hairy; the flowers are produced at the extremity of the branches, collected into ſmall heads; theſe are of a bright yellow colour, and appear in June; ſometimes they are ſucceeded by ſhort woolly pods, containing two or three kidney-ſhaped ſeeds; but unleſs the ſeaſon proves warm, they do not ripen in this country. It is propagated either by ſeeds or cuttings; if by ſeeds, they ſhould be ſown in the autumn, in pots filled with light earth, and placed under

a frame

a frame in winter to protect them from froſt. The following ſpring the plants will riſe, and when they are ſtrong enough to remove, they ſhould be each planted in a ſmall pot filled with light earth, and placed in the ſhade till they have taken new root; after which, they may be placed with other hardy exotic plants, in a ſheltered ſituation, where they may remain till October, when they muſt be removed into ſhelter. Theſe plants are always houſed in winter, yet I have had ſome of them live abroad three or four years, which were planted againſt a ſouth-weſt aſpected wall. It may alſo be propagated by cuttings, which may be planted during any of the ſummer months, obſerving to water and ſhade them until they have taken root. When the cuttings have taken good root, they ſhould be planted in pots, and treated in the ſame manner as the former.

The ſeventh ſort is a low ſhrub, ſeldom riſing above two feet high, but ſends out many ſlender branches, garniſhed with hoary leaves, which are ſometimes ſingle, but generally have three oval lobes, the middle being longer than the other two; the flowers are yellow, and come out from the ſide of the branches, three or four joined together, having woolly empalements, but theſe are rarely ſucceeded by ſeeds in England. It may be propagated by cuttings or ſeeds, in the ſame manner as the former ſort, and treated as hath been directed for that. This has been an old inhabitant in the Engliſh gardens.

The eighth ſort grows naturally in Spain and Portugal, from whence I have received the ſeeds. This is a ſhrub which grows nine or ten feet high, having the appearance of one ſort of Gorſe or Whin, but it hath round leaves growing ſingle. It will live in the open air in mild winters, but hard froſt will deſtroy it. It is propagated by ſeeds only.

The ninth ſort grows naturally in Crete, and alſo in Paleſtine; this was formerly in ſome of the Engliſh gardens, but the ſevere winter of $17\frac{39}{40}$, deſtroyed moſt (if not all the plants) in this country, ſince which time I have not ſeen it. This ſhrub grows five or ſix feet high, the branches are garniſhed with oblong ternate leaves; the flowers, which are yellow, are produced in ſmall cluſters on the ſide of the branches; theſe appear in July and Auguſt, but are not ſucceeded by ſeeds in this country.

This is propagated by cuttings, which ſhould be planted the beginning of June, and if they are cloſely covered with a bell-glaſs, and properly ſhaded, they will put out roots by the end of Auguſt, when they ſhould be carefully taken up, and each planted in a ſmall pot, filled with light earth, and placed in the ſhade until they have taken new root; when they may be placed in the open air till October, and then ſhould be removed into ſhelter, and treated in the ſame way as other hardy green-houſe plants.

The tenth ſort grows naturally in Portugal and Spain: this is a very low ſhrubby plant, whoſe branches ſpread near the ground, garniſhed with ſilvery winged leaves, which are acute-pointed; the flowers are produced toward the extremity of the branches; theſe are not ſucceeded by ſeeds in England, but the plant is propagated by cuttings in the ſame manner as the former, and the plants require the ſame treatment.

ANTIRRHINUM [which in compoſition ſometimes indicates a likeneſs, Ἀντίῤῥινον, of ἀντὶ and ῥὶν, the noſtrils, becauſe it repreſents a noſe:] Snap-dragon, or Calves-ſnout.

The CHARACTERS are,

The empalement is of one leaf, cut into five parts, the two upper ſegments being longer than the lower. The flower is ringent, having an oblong tube, divided at the top into two lips, which are cloſed at the jaw. The upper lip is cut into two, and reflexed on each ſide; the under lip is divided into three obtuſe parts: in the bottom is ſituated an obtuſe nectarium, which is not prominent. There are four ſtamina which are included in the upper lip, two being longer, and two ſhorter, crowned by ſhort ſummits. In the center is placed a roundiſh germen, ſupporting a ſingle ſtyle, crowned with an obtuſe ſtigma. The germen afterward becomes a round obtuſe capſule, having two cells, which are full of ſmall angular ſeeds.

This genus is ranged in Linnæus's fourteenth claſs of plants, entitled Didynamia Angioſperma, the flower having two long and two ſhort ſtamina, and many ſeeds included in a capſule. To this genus Linnæus has joined the Linaria and Aſarina; but as the flowers of the Linaria have ſpurs to their petals, and the nectarium being very prominent, which are not ſo in this genus, ſo it ſhould be ſeparated from it.

The SPECIES are,

1. ANTIRRHINUM (*Minus*) foliis lanceolatis obtuſis alternis caule ramoſiſſimo diffuſo. Hort. Cliff. 324. *Snap-dragon with obtuſe ſpear-ſhaped leaves growing alternate, and a diffuſed branching ſtalk.* Antirrhinum arvenſe minus. C. B. P. 212.
2. ANTIRRHINUM (*Orontium*) floribus ſubſpicatis, calycibus digitatis corolla longioribus. Hort. Upſal. 176. *Snap-dragon with ſpiked flowers, and fingered empalement longer than the flower.* Antirrhinum arvenſe majus. C. B. P. 212.
3. ANTIRRHINUM (*Majus*) foliis lanceolatis petiolatis calycibus breviſſimis racemo terminali. Vir. Cliff. 61. *Snap-dragon with ſpear ſhaped leaves having foot-ſtalks, and very ſhort flower-cups, terminated by a ſpike of flowers.* Antirrhinum majus alterum folio longiore. C. B. P. 211.
4. ANTIRRHINUM (*Latifolium*) foliis lanceolatis glabris, calycibus hirſutis racemo longiſſimo. *Snap-dragon with ſmooth ſpear-ſhaped leaves, hairy flower-cups, and a very long ſpike of flowers.* Antirrhinum latifolium amplo pallido flore. Bocc. Muſ. 2. 49.
5. ANTIRRHINUM (*Italicum*) foliis lineari-lanceolatis hirſutis racemo breviore. *Snap-dragon with narrow, hairy, ſpear-ſhaped leaves, and a ſhorter ſpike of flowers.* Antirrhinum longifolium majus Italicum flore amplo niveo lacteſcente. H. R. Par.
6. ANTIRRHINUM (*Siculum*) foliis linearibus floribus petiolatis axillaribus. *Snap-dragon with narrow leaves and flowers, with foot-ſtalks proceeding from the wings of the leaves.* Antirrhinum ſiculum linariæ folio niveo flore. Bocc. Muſ.

The two firſt ſorts grow naturally on arable land in many parts of England, ſo are ſeldom admitted into gardens; theſe are both annual plants, which come up from ſcattered ſeeds. They flower in June and July, and their ſeeds are ripe in September.

The third ſort is not a native of England, but having been firſt brought into gardens, the ſeeds have ſcattered about in ſo great plenty, that it is become very common upon walls and old buildings in many parts of England. Of this ſort there are ſeveral varieties, which differ in the colour of their flowers, ſome having red flowers with white mouths, ſome with yellow mouths, others have white flowers, with yellow and white mouths. There is alſo one with ſtriped leaves. The laſt is propagated by ſlips and cuttings, which readily take root any time in the ſpring or ſummer. The different colours of the flowers are variable from ſeeds.

The fourth ſort grows naturally in the iſlands of the Archipelago, from whence I received the ſeeds. The leaves of this are much broader, the flowers greatly larger, and the ſpikes longer, than in any of the other ſorts. The colours of the flowers are as changeable in this ſort as the former, when raiſed from ſeeds; but as this is the moſt ſpecious kind, ſo it better deſerves propagating than the common, eſpecially as it is equally hardy.

The fifth ſort has long narrow leaves, which are hairy; the flowers are large, and the ſpike is ſhorter than the former; there are ſome varieties in the colour of the flowers of this ſort, but it is equally hardy with the common ſort.

The ſixth ſort is an annual plant, which ſeldom grows more than a foot high; the leaves of this are very narrow and ſmooth; the flowers come out from the wings of the leaves ſingle, ſtanding on long foot-ſtalks; theſe are very white, with a dark bottom. If the ſeeds of this ſort are permitted to ſcatter, the plants

plants will come up, and require no other care but to thin them and keep them clean from weeds.

The third, fourth, and fifth ſorts are raiſed from ſeeds, which ſhould be ſown in a dry ſoil, which is not too rich, either in April or May; and in July the plants may be planted out into large borders, where they will flower the ſpring following; or they may be ſown early in the ſpring, for flowering the ſame autumn, but then they are not ſo likely to endure the winter; and if the autumn prove bad, they will not perfect their ſeeds.

Theſe plants grow extremely well upon old walls or buildings, in which places they will endure for ſeveral years; whereas thoſe planted in gardens ſeldom laſt longer than two years, unleſs they are planted in a very poor ſoil, and the flowers often cropped, and not ſuffered to ſeed; but any of theſe ſorts may be continued, by planting cuttings in any of the ſummer months, which will eaſily take root.

All the ſorts of Snap-dragons are pretty ornaments in a garden, and requiring very little culture, are rendered more acceptable. They are all hardy plants, and will reſiſt the cold of our winters extremely well, eſpecially if they are planted on a dry, gravelly, or ſandy ſoil; for when they are planted in a rich moiſt ſoil, they will grow very luxuriant for a time, but are very ſubject to rot in autumn or winter; and are much more ſuſceptible of cold, than when they are in a dry, hungry, rocky ſoil; ſo that theſe plants may be placed amongſt ſtones, or they will grow in the joints of old walls, where they may be placed ſo as to render ſome abject part of a garden very agreeable, for they will continue in flower ſeveral months; and if the ſeeds are permitted to ſhed, there will be a continual ſupply of young plants, without any trouble.

Wherever theſe plants are deſigned to grow on walls, or on a rocky barren ſoil, the ſeeds ſhould be ſown the beginning of March, where they are deſigned to remain; (for if the plants are firſt raiſed in a better ſoil, and afterward tranſplanted into thoſe places, they ſeldom ſucceed well.) When the plants are come up, they will require no other culture but to keep them clear from weeds; and where they come up too thick, to pull ſome of them out, ſo as to give them room to grow. In July theſe ſorts will begin to flower, and will continue flowering till the froſt prevents them. Thoſe plants which grow on walls, will have ſtrong woody ſtems, which will continue two or three years or more, and are rarely hurt by froſt.

APARINE [this plant is ſo called, becauſe it is very rough; it is called Philanthropon, of φιλέω, to love, and ἄνθρωπος, man; becauſe if a perſon walks in uncultivated places, the plant not only applies itſelf to his garments, but it holds them, as if it had a mind to bind man with an amicable band:] Gooſe-graſs or Clivers.

The common ſort grows wild almoſt every where, the ſeeds ſticking to the cloaths of people that paſs by where they grow: it is ſometimes uſed in medicine, but it is too common a weed to be admitted into a garden.

There are ſome other ſorts of this plant which are kept in botanic gardens for the ſake of variety, which I ſhall beg leave to enumerate here.

1. Aparine ſemine lævi. Tourn. *Gooſe-graſs with a ſmooth ſeed.* This is under Gallium in Linnæus.
2. Aparine ſemine coriandri ſaccharati. Park. Theat. *Gooſe-graſs with ſweet ſeeds like Coriander.*
3. Aparine pumila ſupina, flore cæruleo. Tourn. *Low trailing Gooſe-graſs, with a blue flower.* The two laſt are included in Linnæus's genus of Vaillantia.

All theſe plants, if they are permitted to ſcatter their ſeeds, will maintain themſelves in a garden without any other culture, than that of preventing other weeds from over-growing them, theſe being all very low plants.

The firſt ſort grows wild in Cambridgeſhire, as doth the third about Liphoeck in Hampſhire, where I have gathered it.

APETALOUS plants, [of α privative, and πέταλον, a flower-leaf, *Gr.*] are ſuch as have no petals or flower-leaves.

APHACA. See Lathyrus.

APICES [of Apex, *Lat.* a top or point] theſe are called ſummits by Vaillant, and are thoſe little knobs that grow on the top of the ſtamina in the middle of the flower: which are generally ſuppoſed to be a kind of male ſperm, which when ripe, diffuſes itſelf to every part of the flower, and fecundates the ovarium and renders it fruitful.

APIOS. See Glycine.

APIUM [Apium is ſo called, as ſome ſay, of Apes, bees, becauſe bees are ſaid to be delighted very much with it,] Parſley.

The Characters are,

It is a plant with an umbelliferous flower; the rays of the great umbel are few, but thoſe of the ſmaller are many; the involucrum is in ſome ſpecies of one leaf, and in others of many; the petals of the greater umbel are uniform; theſe are round, equal, and turn inward. Each flower has five ſtamina, crowned by roundiſh ſummits. Under the flower is ſituated the germen, ſupporting two reflexed ſtyles, crowned by blunt ſtigma; the germen afterward becomes an oval channelled fruit, dividing into two parts, having two oval ſeeds channelled on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The Species are,

1. Apium (*Petroſelinum*) foliolis caulinis linearibus involucellis minutis. Hort. Cliff. 108. *Parſley with very narrow leaves on the flower-ſtalks.* Apium hortenſe vel petroſelinum vulgò. C. B. P. *Common Parſley.*
2. Apium (*Criſpum*) foliis radicalibus amplioribus criſpis caulinis ovato-multifidis. *Parſley with the lower leaves very broad and curled, the upper oval, and cut into many ſegments.* Apium vel petroſelinum criſpum. C. B. P. 153. *Curled Parſley.*
3. Apium (*Latifolium*) foliis radicalibus trifidis, ſerratis, petiolis longiſſimis. *Parſley with under leaves divided into three parts, which are ſawed, and have very long foot-ſtalks.* Apium hortenſe latifolium maxima craſſiſſima ſuavi & eduli radice. Boerh. Ind. alt. *The large rooted Parſley.*
4. Apium (*Graveolens*) foliolis caulinis cuneiformibus. Hort. Cliff. 107. *Parſley with the lower leaves faſhioned like a wedge.* Apium paluſtre ſive apium officinarum. C. B. P. 154. *Smallage.*
5. Apium (*Dulce*) foliis erectis, petiolis longiſſimis foliolis quinque lobatis ſerratis. *Parſley with upright leaves, having very long foot-ſtalks, and the ſmaller leaves compoſed of five ſawed lobes.* Apium dulce ceteri Italorum. Inſt. R. H. 305. *Upright Celery.*
6. Apium (*Rapaceum*) foliis patulis, petiolis brevibus, foliolis quinis ſerratis, radice rotundo. *Parſley with ſpreading leaves, having ſhort foot-ſtalks, the ſmaller leaves having five lobes, and a round root.* Apium dulce degener, radice rapacea. Juſſ. *Celeriack, or Turnep-rooted Celery.*
7. Apium (*Luſitanicum*) foliis radicalibus tribolatis, caulinis quinque-lobatis crenatis. *Parſley with under leaves having three lobes, and thoſe on the ſtalks five, which are indented.* Apium Luſitanicum maximum, folio trilobato flore luteolo. Boerh. Ind. alt.

The firſt ſort is the common Parſley, which is generally cultivated for culinary uſe; and is what the College of Phyſicians have directed to be uſed in medicine, under the title of Petroſelinum; for when Apium is preſcribed, the Smallage is always intended.

The ſecond ſort has generally been ſuppoſed to be only a variety of the firſt, but from many years trial I have always found, that if the ſeeds are carefully ſaved from plants of the curled-leaved Parſley, it will conſtantly produce the ſame; but there are few perſons who will be at the trouble to ſave the ſeeds ſo carefully, as not to have ſome of the common ſort mixed with it; for when ſeeds are bought at the

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ſhops, there is generally a mixture of both: therefore the only method to have it good, is to ſeparate all thoſe plants which have plain leaves from the curled, as ſoon as they are diſtinguiſhable, leaving only ſuch as are of the right kind; if this is duly obſerved, the ſeeds will conſtantly produce the ſame.

The third ſort is chiefly cultivated for their roots, which are now pretty commonly ſold in the London markets; the leaves of this ſort have much longer foot-ſtalks, and their ſubdiviſions are not ſo numerous as in the common Parſley; the lobes of the leaves are much larger, and of a darker green, ſo that it is eaſily diſtinguiſhed from the common ſort by its leaves, but the roots are ſix times as large as the common Parſley can be brought to with the utmoſt culture. I have ſown the ſeeds of both ſorts for ſeveral years on the ſame ſpot of ground, and have thinned the plants when young, to an equal diſtance, and given the ſame culture to both; but when their roots were taken up, thoſe of the common ſort were not larger than a man's little finger, but the other were as large as full grown Carrots, which were very tender and ſweet, whereas the other were ſtringy and ſtrong; and this difference conſtantly holds, ſo it may be allowed to be ſpecifically different. This ſort was many years cultivated in Holland, before the Engliſh gardeners could be prevailed on to ſow it. I brought the ſeeds of it from thence in 1727, and would then have perſuaded ſome of the kitchen-gardeners to make trial of it, but they refuſed to accept of it, ſo that I cultivated it ſeveral years before it was known in the markets.

The fourth ſort is commonly known by the title of Smallage. This is what the phyſicians intend when they preſcribe Apium. Dr. Linnæus has joined to this the Celery, ſuppoſing them to be the ſame, and the only difference to ariſe from culture, but herein he is greatly miſtaken; for I have cultivated the Smallage in gardens forty years, to try if by art it could poſſibly be brought to the ſame goodneſs as Celery, but have not been able to alter it from its original; all that can be done by culture, is to bring it to a larger ſize than it naturally grows wild, and by earthing it, to give it a whiteneſs; but it will not grow tall as Celery, nor will it riſe with a ſtrait ſtem, but ſends out many ſuckers near the root, and when it is blanched, retains its ſtrong rank taſte, which no culture can alter, therefore I make no doubt of its being a diſtinct ſpecies.

The fifth ſort is the Celery before-mentioned, and the ſixth ſort was ſuppoſed to be a degenerate ſpecies from it, but I cannot agree to this opinion; for from many years trial I have never found it vary. The leaves of this ſort are ſhort, when compared with thoſe of the other, and ſpread open horizontally; the roots grow as large as the common Turneps. The difference which I have obſerved to ariſe from this culture, has been only in the ſize of the roots; thoſe on rich ground, which were properly cultivated were much larger than thoſe on poorer land, but the leaves and outward appearance of the plants were never altered, ſo that I make no doubt of its being a different ſpecies.

The ſeeds of the ſeventh ſort I received from the royal garden at Paris, many years ſince, where it had been long preſerved, and maintained its difference; and from more than twenty years cultivating it in the garden at Chelſea, I have found the ſame, ſo that I cannot doubt of its being different from all the other ſpecies.

The broad-leaved Garden Parſley, mentioned by Caſper Bauhin, and the round-leaved Portugal Parſley, mentioned by Tournefort, I believe are only varieties of the common Parſley; for if they are diſtinct ſpecies, all the ſeeds which I have received from different parts of Europe, under thoſe titles, have been wrong; for the plants which have riſen from thoſe ſeeds, have always proved to be the common ſort.

As Tournefort, and many other botaniſts, have enumerated all the varieties of plants which were found in the gardens, and did not diſtinguiſh which of them were ſpecifically different; ſo Dr. Linnæus has gone into the other extreme, and ſuppoſed many plants, which are permanently different, to be only accidental varieties, ariſing from culture. But as he is now cultivating as many plants as the inclemency of the climate where he is ſituated, will permit, there is no doubt of his reforming his error, in this particular, when he finds what plants retain their ſpecific difference.

The common Parſley muſt be ſown early in the ſpring, for the ſeeds remain a long time in the earth, the plants ſeldom appearing in leſs than ſix weeks after the ſeeds are ſown. This ſort is generally ſown in drills by the edges of borders in the kitchen-gardens near London, becauſe it is much eaſier to keep it clear from weeds, than if the ſeeds are ſown promiſcuouſly on a border, and the Parſley is much ſooner cut for uſe: but when the roots are deſired for medicinal uſe, then the ſeeds muſt be ſown thin; and when the plants are come up, they ſhould be hoed out ſingle, as is practiſed for Carrots, Onions, &c. obſerving alſo to cut up the weeds: if this be obſerved, the roots will become fit for uſe by July or Auguſt, and continue ſo till ſpring.

There are ſome perſons who are afraid to uſe Parſley in their kitchens, leſt they ſhould ſuffer by having the leſſer Hemlock mixed with it, whoſe leaves are ſo like Parſley, that perſons who are not ſkilled in botany, may be eaſily deceived; which being a noxious plant, ſeveral perſons have been injured by eating it: but to prevent this, I have for many years cultivated the ſort with curled leaves, which is ſo unlike the Hemlock, that no perſon, however ignorant, can miſtake one for the other, and have conſtantly adviſed thoſe of my acquaintance to do the ſame; for the curled ſort is equally good as the common Parſley, and I have conſtantly found the ſeeds, ſaved from the curled ſort, to produce the ſame.

The common Parſley is, by ſome ſkilful perſons, cultivated in fields for the uſe of ſheep, it being a ſovereign remedy to preſerve them from the rot, provided they are fed twice a week for two or three hours each time with this herb; but hares and rabbets are ſo fond of it, that they will come from a great diſtance to feed upon it; and in countries where theſe animals abound, they will deſtroy it, if it is not very ſecurely fenced againſt them; ſo that whoever has a mind to have plenty of hares in their fields, by cultivating Parſley, will draw all the hares of the country to them, and this will preſerve them ſound.

The beſt time for ſowing it in the fields is about the middle or latter end of February; the ground ſhould be made fine, and the ſeeds ſown pretty thick, in drills drawn at about a foot aſunder, that the ground may be kept hoed between the drills, to deſtroy the weeds, which, if permitted to grow, will ſoon overrun the Parſley. One buſhel of ſeed will ſow an acre of land.

The great Garden Parſley is now more known to us in England than it was ſome years paſt. In Holland it has been long common in all their markets: they bring theſe roots in bunches, as we do young Carrots to market in ſummer; and the roots are much of the ſame ſize: it is called Petroſeline Wortle by the Dutch, who are very fond of it for water ſouche.

It may be cultivated by ſowing the ſeeds in good ground early in the ſpring; and in April, when the plants are up, cut them out with a hoe (as is practiſed for young Carrots) to about five or ſix inches ſquare, and keep them conſtantly clean from weeds; and in July the roots will be fit to draw for uſe, and may be boiled and eaten as young Carrots; and are very palatable and wholſome, eſpecially for thoſe who are troubled with the gravel.

But if theſe plants are cut out, to allow them more room, if the ſoil is good, the roots will grow to the ſize of a middling Parſnep, by September.

Smallage is a common weed by the ſide of ditches and brooks of water, in many parts of England, ſo

ſo that it is ſeldom cultivated in gardens; but if any perſon is willing to propagate it, the ſeeds ſhould be ſown ſoon after they are ripe, on a moiſt ſpot of ground; and when the plants come up, they may be either tranſplanted in a moiſt ſoil, or hoed out, and left ſix or eight inches aſunder, where they may remain for good. The ſeed of this plant is one of the leſſer warm ſeeds; both the herb and ſeeds are uſed in medicine.

The ſeeds of the two ſorts of Celery ſhould be ſown at two or three different times, the better to continue it for uſe through the whole ſeaſon, without running up to ſeed. The firſt ſowing ſhould be in the beginning of March, upon a gentle hot-bed; the ſecond may be a fortnight or three weeks after, which ought to be in an open ſpot of light earth, where it may enjoy the benefit of the ſun; the third time of ſowing ſhould be the end of April, or beginning of May, which ought to be in a moiſt ſoil; and if expoſed to the morning ſun only, it will be ſo much the better, but it ſhould not be under the drip of trees.

The ſeeds which are ſown in the hot-bed will come up in about three weeks or a month after ſowing, when the plants ſhould be carefully cleared from weeds; and if the ſeaſon prove dry, they muſt be frequently watered; and in about a month or five weeks after it is up, the plants will be fit to tranſplant: you muſt therefore prepare ſome beds of moiſt rich earth, in a warm ſituation, in which you ſhould prick theſe young plants, at about three inches ſquare, that they may grow ſtrong; and if the ſeaſon ſhould prove cold, the beds muſt be covered with mats, to ſcreen the plants from morning froſts, which would retard their growth: you muſt alſo obſerve, in drawing theſe plants out of the ſeed-beds, to thin them where they grow too thick, leaving the ſmall plants to get more ſtrength before they are tranſplanted; by which means one and the ſame ſeed-bed will afford three different plantings, which will accordingly ſucceed each other for uſe.

You muſt obſerve, if the ſeaſon proves dry, to keep it diligently watered after it is tranſplanted, as alſo to clear the ſeed-beds from weeds; and after every drawing, keep them duly watered, to encourage the ſmall plants left therein.

The middle of May ſome of the plants of the firſt ſowing will be fit to tranſplant for blanching, which ſhould be planted in a moiſt, rich, light ſoil, upon which the firſt planted Celery will often grow to be twenty inches long in the clean blanched parts, which upon a poor or dry ſoil ſeldom riſes to be ten inches.

The manner of tranſplanting it is as follows: after having cleared the ground of weeds, you muſt dig a trench by a line about ten inches wide, and ſix or ſeven inches deep, looſening the earth in the bottom, and laying it level; the earth that comes out of the trench ſhould be equally laid on each ſide the trench, to be ready to draw in again to earth the Celery as it advances in height. Theſe trenches ſhould be made at three feet diſtance from each other; then plant the plants in the middle of the trench, at about four or five inches diſtance, in one ſtrait row, having before trimmed the plants, and cut off the tops of the long leaves; when they are planted you muſt obſerve to cloſe the earth well to their roots, and to water them plentifully until they have taken freſh root; after which time it will be needleſs, except in dry ſoils, or very dry ſeaſons: as theſe plants advance in height, you muſt obſerve to draw the earth on each ſide cloſe to them, being careful not to bury their hearts, nor ever to do it but in dry weather, otherwiſe the plants will rot.

When the plants have advanced a conſiderable height above the trenches, and all the earth, which was laid on the ſides thereof, hath been employed in earthing them up; you muſt then make uſe of a ſpade to dig up the earth between the trenches, which muſt alſo be made uſe of for the ſame purpoſe, continuing from time to time to earth it up, until it is fit for uſe.

The firſt of your planting out will, perhaps, be fit for uſe by the beginning of July, and will be ſucceeded by the after plantations; and if the latter ſowings

are rightly managed, there will be a ſucceſſion of Celery for uſe till April; but you ſhould obſerve to plant the laſt crop in a drier ſoil, to prevent its being rotted with too much wet in winter; and alſo if the weather ſhould prove extreme ſharp, you will do well to cover your ridges of Celery with ſome Peaſe-haulm, or ſome ſuch light covering, which will admit the air to the plants; for if they are covered too cloſe, they will be very ſubject to rot; by this means you may preſerve your Celery in ſeaſon a long time, but you muſt remember to take off the covering whenever the weather will permit, otherwiſe it will be apt to cauſe the Celery to rot. By this method of covering the Celery, the froſt will be kept out of the ground; ſo it may be always taken up for uſe when it is wanted, which, if neglected, it cannot be taken up in hard froſt. The Celery, when fully blanched, will not continue good above three weeks or a month before it will rot or pipe: therefore, in order to continue it good, you ſhould have at leaſt ſix or ſeven different ſeaſons of planting; ſo that if it be only intended to ſupply a family, there need not be much planted at each time, but this muſt be proportioned according to the quantity required.

The other ſort of Celery, which is commonly called Celeriac, is to be managed in the ſame manner as is directed for the Italian Celery, excepting that this ſhould be planted upon the level ground, or in very ſhallow drills, for this plant ſeldom grows above eight or ten inches high, ſo requires but little earthing up; the great excellency of this being in the ſize of the root, which is often as large as ordinary Turneps. It ſhould be ſown about the middle of March, upon a rich border of earth, and, in dry weather, conſtantly watered, otherwiſe the ſeeds will not grow: when the plants are large enough to tranſplant out, they ſhould be placed eighteen inches aſunder, row from row, and the plants ſix or eight inches diſtant in the rows; the ground muſt be carefully kept clean from weeds, but this ſort will require but one earthing up, which ſhould not be performed until the roots are nearly grown: both theſe ſorts of Celery delight in a rich, light, moiſt ſoil, where they will grow to a much larger ſize, and will be ſweeter and tenderer than on a poor or dry ground.

The beſt method to ſave this ſeed, is to make choice of ſome long good roots of the upright Celery, which have not been too much blanched, and plant them out at about a foot aſunder in a moiſt ſoil, early in the ſpring; and when they run up to ſeed, keep them ſupported with ſtakes, to prevent their being broken down by the winds: and in July, when the ſeed begins to be formed, if the ſeaſon ſhould prove very dry, it will be proper to give ſome water to the plants, which will greatly help their producing good ſeeds. In Auguſt theſe ſeeds will be ripe, at which time it ſhould be cut up, in a dry time, and ſpread upon cloths in the ſun to dry; then beat out the ſeeds, and preſerve them dry in bags for uſe.

APIUM ANISUM DICTUM. See PIMPINELLA.

APIUM MACEDONICUM. See BUBON.

APIUM PYRENAICUM. See CRITHMUM.

APOCYNUM. Tourn. Inſt. R. H. 91. Lin. Gen. Plant. 269. [Ἀπόκυνον, of ἀπὸ and κυνὸς a dog, becauſe the antients believed this plant would kill dogs.] Dogſbane.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five acute ſegments at the top; it hath but one petal, which is of the open bell-ſhape, cut into five parts at the brim, which turn backward; in the bottom of the flower are ſituated five nectariums, which are oval, and ſurround the germen: there are five ſtamina, ſcarce viſible, which are crowned by oblong erect ſummits, which are bifid; in the center are two oval germen, ſupporting ſmall ſtyles, crowned with globular ſtigma, larger than the germen. The germen afterward become two long pointed capſules, opening in two valves, having one cell, which is filled with compreſſed ſeeds, lying over each other like tiles on a houſe, each being crowned with down.

This

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. APOCYNUM (*Androſæmi folium*) caule rectiuſculo herbaceo foliis ovatis utrinque glabris cymis terminalibus. Lin. Sp. Plant. 213. *Dogſbane with an erect herbaceous ſtalk, oval leaves, ſmooth on both ſides, and terminated by a head of flowers.* Apocynum Canadenſe foliis androſæmi majoris. Mor. Hiſt. 3. p. 609.
2. APOCYNUM (*Cannabinum*) caule rectiuſculo herbaceo foliis oblongis panniculis terminalibus. Lin. Sp. Plant. 213. *Dogſbane with an erect herbaceous ſtalk, oblong leaves, and ſtalks terminated by flowers.* Apocynum Canadenſe maximum flore minimo herbaceo. Pluk. Alm. 35.
3. APOCYNUM (*Venetum*) caule rectiuſculo herbaceo foliis ovato-lanceolatis. Prod. Leyd. 411. *Dogſbane with an upright herbaceous ſtalk, and oval ſpear-ſhaped leaves.* Apocynum maritimum venetum ſalicis folio flore purpureo. Tourn. Inſt. 92.
4. APOCYNUM (*Specioſiſſimum*) foliis ovatis petiolatis, ſuperne glabris, floribus amplis pediculis longis hirſutis caule fruticoſo. *Dogſbane with oval leaves, which are ſmooth on their upper ſide, large flowers with long hairy foot-ſtalks, and a ſhrubby ſtalk.* Apocynum erectum fruticoſum, flore luteo maximo & ſpecioſiſſimo. Sloan. Cat. Jam. 89.
5. APOCYNUM (*Scandens*) foliis oblongo-cordatis rigidis floribus lateralibus, caule fruticoſo volubili. *Dogſbane with ſtiff, oblong, heart-ſhaped leaves, flowers growing on the ſides of the ſtalk, and a ſhrubby twining ſtalk.* Apocynum ſcandens foliis citrii ſiliquis maculatis. Plum. Cat. 2.
6. APOCYNUM (*Fruteſcens*) caule erecto fruteſcente foliis lanceolato-ovalibus corollis acutis fauce villoſis. Flor. Zeyl. 114. *Dogſbane with an upright ſhrubby ſtalk, oval ſpear-ſhaped leaves, acute petals, and hairy jaws.* Apocynum caule erecto arboreo foliis ovatis acutis. Prod. Leyd. 412.
7. APOCYNUM (*Reticulatum*) caule volubili perenne foliis ovatis venoſis. Prod. Leyd. 412. *Dogſbane with a perennial twining ſtalk, and oval veined leaves.*
8. APOCYNUM (*Obliquum*) caule volubili foliis ovatis rigidis obliquis cymis lateralibus tubo floris longiſſimo. *Dogſbane with oval ſtiff leaves which are oblique, a twining ſtalk, and flowers growing from the ſide of the branches.* Apocynum ſcandens majus folio ſubrotundo. Sloan. Cat. Jam. 89.
9. APOCYNUM (*Nervoſum*) caule fruticoſo ſcandente foliis ovatis nervoſis cymis lateralibus flore luteo magno tubo longiſſimo. *Dogſbane with a climbing ſhrubby ſtalk, oval-veined leaves, and large flowers growing in bunches from the ſides of the ſtalks, having very long tubes.*
10. APOCYNUM (*Cordatum*) foliis oblongo-cordatis, mucronatis ſeſſilibus floribus lateralibus, caule ſcandente. *Dogſbane with oblong heart-ſhaped leaves, which end in a point, flowers growing at the wings of the leaves, and a climbing ſtalk.* Apocynum ſcandens foliis oblongis acuminatis floribus amplis patulus & luteis. Houſt. MSS. Fig. Pl. num. 8. pl. 44. f. s.
11. APOCYNUM (*Villoſum*) foliis cordatis glabris floribus villoſis lateralibus petiolis longioribus caule ſcandente. *Dogſbane with ſmooth heart-ſhaped leaves, hairy flowers growing from the ſide of the branches, and a climbing ſtalk.* Apocynum ſcandens amplo flore villoſo luteo ſiliquis tumidis anguloſis. Houſt. MSS. Fig. Pl. tab. 44. fig. 2.

The firſt ſort grows naturally in North America. This hath a perennial root; the ſtalks riſe about three feet high, grow upright, and are garniſhed with ſmooth oval leaves, growing oppoſite. Theſe, as alſo the ſtalks, abound with a milky juice, which flows out when they are broken; the flowers are white, and collected in a kind of umbel, growing at the top of the ſtalks. The nectarii in the bottom, have a purpliſh caſt; theſe flowers are ſeldom ſucceeded by pods which ripen in England, but the plant is propagated by parting the roots. It is hardy, ſo will thrive in the full ground, but the ſoil ſhould be light or dry, otherwiſe the roots are apt to rot in winter. The beſt time to part the roots is in March, before they begin to put out new ſtalks.

The ſecond ſort is a native of the ſame countries as the firſt; the roots of this ſort creep far in the ground, ſo that when it is planted in a garden, it is apt to ſpread ſo much as to be troubleſome. The ſtalks of this ſort are brown, and grow about two feet high, garniſhed with oblong ſmooth leaves, ſet on by pairs, and abound with a milky juice as the former. Towards the upper part of the ſtalk, the flowers come out from the wings of the leaves, collected in ſmall bunches, which are of an herbaceous white colour, and ſmall, ſo make no great appearance, therefore are ſeldom admitted into gardens, except for the ſake of variety. This is very hardy, and propagates too faſt by its creeping roots. Both theſe ſorts flower in July, and in autumn their ſtalks decay to the root.

The third ſort grows upon a ſmall iſland in the ſea, near Venice, but is ſuppoſed to have been originally brought from ſome other country. There are two varieties of this, one with a purple, and the other with a white flower. The roots of this creep pretty much, by which it is propagated, for it ſcarce ever produces any ſeeds either in the gardens where it is cultivated, or at Venice, where it grows without care, as I have been informed by a very curious botaniſt, who reſided many years at Venice, and conſtantly went to the ſpot ſeveral times in the ſeaſon, to procure the ſeeds, if there had been any produced; but he aſſured me he never could find any pods formed on the plants. The ſtalks of this riſe about two feet high, and are garniſhed with oval ſmooth leaves placed oppoſite; the flowers grow at the top of the ſtalks in ſmall umbels, ſhaped like thoſe of the former ſorts, but are much larger, ſo that the ſort with purple flowers makes a pretty appearance. It flowers in July and Auguſt. This ſort will live in the open air, provided it is planted in a warm ſituation and a dry ſoil; for although the ſoil in which it grows wild near Venice, is moiſt, yet in this country the roots will rot in winter, when they are in a wet ground. The beſt time to remove and plant the roots is in ſpring, juſt before they begin to puſh out new ſtalks.

The fourth ſort grows naturally in Jamaica, in the Savannas, from whence it had the title of Savanna Flower, by which it is chiefly known in that iſland. This ſort riſes three or four feet high, having woody ſtalks, which ſend out a few lateral branches, garniſhed with oval ſmooth leaves, placed by pairs oppoſite, of a ſhining green colour on their upper ſides, but pale and veined underneath; the flowers are produced from the ſides of the branches, upon long foot-ſtalks; there are commonly four or five buds at the end of each, but there is ſeldom more than one of them which comes to flower, the others withering ſoon. The flower is very large, having a long tube, which ſpreads open wide at the top, of a bright yellow, ſo make a fine appearance, eſpecially in the places where the plants grow naturally, being moſt part of the year in flower. This plant is too tender to thrive in England without the aſſiſtance of a ſtove. It is propagated by ſeeds, which muſt be procured from Jamaica, for the plants do not perfect them in England, nor are many of the ſeeds which are brought from thence good, either from their being unſkilfully gathered before they are ripe, or being put up moiſt, for few of them have ſucceeded. When the ſeeds are obtained, they ſhould be ſown in pots filled with light ſandy earth, and plunged into a hot-bed of tanners bark. If the ſeeds are good, the plants will appear in a month or five weeks after, when they ſhould be treated in the ſame manner as other tender plants from the ſame country, with this difference only, to be ſparing in watering them, for theſe plants which abound with a milky juice, require very little wet. They muſt be conſtantly kept in the tan-bed in the ſtove, and as they advance in height, they will require larger pots, but there muſt be great care not to over-pot them; for unleſs their roots are confined, the plants will not thrive. The ſecond year the

plants will flower, if they have been ſkilfully managed, when they will make a fine appearance in the ſtove; the uſual time of their flowering in England, is in July and Auguſt, but the plants retain their leaves through the year, which, being of a beautiful green, look very well at all ſeaſons.

The fifth ſort was diſcovered by father Plumier, in ſome of the French iſlands in America, who made a drawing of the plant. It was afterwards found by the late Mr. Robert Millar, ſurgeon, growing plentifully near Carthagena, in New Spain, from whence he ſent the ſeeds, which ſucceeded in ſeveral gardens. This plant hath twining ſtalks, by which it mounts to the tops of very tall trees, garniſhed with ſtiff, oblong, heart-ſhaped leaves, which are ſmooth, and of a ſhining green colour, being of the ſame thickneſs with thoſe of the Citron-tree. The flowers are produced in ſmall cluſters from the ſides of the branches, and are of an herbaceous colour, ſo do not make any great appearance. Theſe appear in Auguſt and September, but are not ſucceeded by pods in this country.

The ſixth ſort grows naturally in India, Ceylon, and upon the coaſts of Guinea, from whence I have received the ſeeds. This plant riſes with a woody ſtem to the height of five or ſix feet, dividing into ſeveral branches, garniſhed with oblong, pointed, ſmooth leaves, of a ſhining green above, but pale underneath, placed by pairs oppoſite. From the wings of the leaves the flowers are produced in looſe bunches. Theſe are ſmall, tubulous, and of a purple colour, but are never ſucceeded by pods in this country. It is a very tender plant, ſo muſt be conſtantly kept in a hot-houſe, and plunged in the tan-bed, otherwiſe it will not thrive in England; it may be propagated by cuttings during the ſummer months, but they ſhould be laid to dry in the ſtove, three or four days before they are planted; for as the plants abound with a milky juice, ſo unleſs the ends of the cuttings where the wounds are made, are well dried and healed over before they are put into the ground, they are very ſubject to rot. This plant muſt be ſparingly watered, eſpecially in winter, and ſhould be planted in light ſandy earth.

The ſeventh ſort grows naturally in India; I received ſeeds of this from Dr. Van Royen, profeſſor of botany at Leyden. This plant hath a twining ſtalk, by which it riſes to a conſiderable height, garniſhed with oblong leaves, which are much veined, and abound with a milky juice, which flows out whenever they are broken. This plant hath not yet produced flowers in England. It is tender, ſo requires to be conſtantly preſerved in the ſtove, otherwiſe it will not thrive in this country.

The eighth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. William Houſton. It hath a climbing ſtalk, which faſtens to the neighbouring trees, and riſes ten or twelve feet high. The leaves are oval, ſtiff, and oblique to the foot-ſtalk; the flowers are produced from the wings of the leaves, of a purpliſh colour, and have very long tubes, but ſpread open wide at the top. This doth not produce ſeeds in England, nor have I been able to propagate it, either by layers or cuttings. It is tender, ſo muſt conſtantly remain in the ſtove, and ſhould have little water.

The ninth ſort hath a climbing woody ſtalk, and riſes to a conſiderable height, by the ſupport of neighbouring trees. The leaves grow by pairs oppoſite; they are oval, ending in a ſharp point, and have many tranſverſe nerves from the midrib. The flowers come out from the wings of the leaves, each ſtanding upon a ſeparate long foot-ſtalk; they are large, of a bright yellow colour, with very long tubes, ſpreading open wide at the top; theſe are ſucceeded by long compreſſed pods, which have borders on one ſide filled with long channelled ſeeds, which are crowned with long plumes of ſoft down. This ſort grows naturally at Carthagena, in New Spain, from whence I received the ſeeds. It is tender, ſo will not thrive in England, unleſs it is conſtantly preſerved in the ſtove. This is propagated by ſeeds, which muſt be procured from the country where it grows naturally, for the ſeeds do not ripen in this country. When the ſeeds are procured, they muſt be ſown in pots, and plunged into a hot-bed; and when the plants come up, they ſhould be treated in the ſame manner as hath been before directed for the fourth ſort. It flowers in Auguſt and September in England, but in its natural country it flowers great part of the year.

The tenth and eleventh ſorts were diſcovered at La Vera Cruz, in New Spain, by the late Dr. William Houſton, who ſent their ſeeds to England. Theſe plants have both climbing ſtalks, by which they mount to the tops of the talleſt trees. In England they have climbed over the plants in the ſtoves, and riſen to upward of twenty feet high. The tenth ſort has produced flowers in England ſeveral times, but the eleventh, which grows more luxuriantly than the other, never had any appearance of flowers. Theſe are both propagated by ſeeds, which ſhould be ſown as the fourth ſort, and the plants muſt be treated in the ſame manner afterward. All theſe ſpecies of Dogſbane abound with a milky juice, which flows out from any part of their ſtalks or leaves when they are broken; and this is generally ſuppoſed to be hurtful, if taken inwardly, for it doth not raiſe bliſters on the ſkin, as the juice of Spurge, and other acrid plants, ſo is not injurious unleſs inwardly taken. The pods of all the ſorts are filled with ſeeds, which are, for the moſt part, compreſſed, and lie over each other (*imbricatim*) like tiles on a houſe: theſe have each a long plume, of a cottony down faſtened to their crowns, by which, when the pods are ripe and open, the ſeeds are wafted by the wind to a conſiderable diſtance; ſo that in the countries where theſe plants naturally grow, they are ſome of the moſt troubleſome weeds.

The down of theſe plants is in great eſteem in France, for ſtuffing of eaſy chairs, making very light quilts, which are warm, and extremely light, ſo are very proper covering for perſons afflicted with the gout, for the down is ſo extreme light and elaſtic that it occaſions no weight. This the French call Delawad, and in the ſouthern parts of France, where ſome of the ſorts will thrive in the open air, and perfect their ſeeds, there are many plantations made of theſe plants for the ſake of the down.

As many of theſe ſorts grow plentifully in the uncultivated lands in Jamaica, this cottony down might be eaſily procured from thence in plenty, and might probably become a vendible commodity in England, which may turn to advantage, if once it becomes a faſhionable ſort of furniture, eſpecially as the plants require no cultivation, the only trouble being to collect the down, which, in ſome of the ſorts which have large pods, is produced in great quantity, ſo may be collected with little trouble.

The other ſorts which have been ranged under this genus, are now referred to the following genera, to which the reader is deſired to turn, for ſuch of them as are not here enumerated, viz. Aſclepias, Cynanchum, and Periploca.

APPLE-TREE. See Malus.

APPLES of Love. See Lycopersicon and Solanum.

APPLES (MAD). See Melongena.

APRICOT, or ABRICOT. See Armeniaca.

AQUIFOLIUM. See Ilex.

AQUILEGIA [called alſo *Aquilina*, from *Aquila*, L. an eagle, becauſe the flower reſembles that bird]. Columbine.

The Characters are,

The flower hath no empalement, but is compoſed of five equal oval petals, which are plain, and ſpread open, within which are five equal nectarii, ranged alternately with the petals, each of the horns widening upward, the opening being oblique to the ſide as it aſcends, and is faſtened to the receptacle within, the lower part lengthening gradually into a long tube, hanging by a blunt incurved apex. It hath many awl-ſhaped ſtamina, which are crowned by oblong upright ſummits, with five oval germen, ſupporting

porting awl-ſhaped ſtyles, which are longer than the ſtamina, crowned by erect ſtigma; the germen afterwards become five cylindrical veſſels, which ſtand upright, are parallel, pointed, and open in one cell, which are filled with oval ſhining ſeeds.

This genus of plants is ranged in the fifth ſection of Linnæus's thirteenth claſs, entitled Polyandria Pentagynia, the flowers having many ſtamina and five ſtyles.

The SPECIES are,

1. AQUILEGIA (*Vulgaris*) nectaris rectis petalo lanceolato brevioribus. Lin. Sp. Plant. 533. *Columbine with upright nectariums ſhorter than its petal, which is ſpear-ſhaped.* Aquilegia Sylveſtris. C. B. P. 144. *Wild Columbine.*
2. AQUILEGIA (*Alpina*) nectariis rectis, petalis ovatis longioribus. *Columbine with erect nectarii, and longer oval flower-leaves.* Aquilegia montana magno flore. C. B. P.
3. AQUILEGIA (*Inverſa*) nectariis incurvis. Hort. Upſal. *Columbine with nectarii turned inward.* Aquilegia flore pleno inverſo. J. B. 485. *Columbine with a double inverted flower.*
4. AQUILEGIA (*Canadenſis*) nectariis rectis ſtaminibus corollâ longioribus. Hort. Upſal 153. *Columbine with ſtraight nectarii, and ſtamina longer than the petals.* Aquilegia pumila præcox Canadenſis. Cornut. Canad. 60. *Early dwarf Canada Columbine.*

The firſt ſort is found growing wild in the woods in ſome parts of England; I have frequently gathered it in the woods, near Bexley, in Kent; and alſo between Maidſtone and Rocheſter. The flowers of this are blue, the petals are ſhort, and the nectarii are very prominent, in which it differs from the ſecond, whoſe petals are longer, and the nectarii do not riſe ſo high. This I found growing naturally near Ingleborough Hill, in Yorkſhire. The flowers of this are much larger than thoſe of the Garden Columbine, and the ſeeds which I ſowed of this in the garden at Chelſea, produced the ſame ſpecies without the leaſt variation.

The third is the Garden Columbine, of which there are great varieties, not only in the colour and fulneſs of their flowers, but alſo in their form. In ſome there are no viſible nectarii, but in place of them a multiplicity of petals, ſo that the flowers are as double as thoſe of the Larkſpur. Theſe are commonly called Roſe Columbines; the colours of theſe are cheſnut, blue, red, and white, and ſome are finely variegated with two colours.

There are others with ſharp pointed petals, which expand in form of a ſtar; of theſe there are ſingle and double flowers, of the ſeveral colours as the former. From the different ſhape of theſe flowers, any perſon not well ſkilled in the culture of plants, would ſuppoſe they were diſtinct from the others; but having ſeveral years ſown their ſeeds, which were collected with great care, I have found them always varying from one to the other: therefore I have not enumerated their varieties here, knowing they can never be preſerved the ſame from ſeeds, however carefully they are ſaved: however, as the ſorts with variegated flowers are eſteemed the greateſt beauties, ſo thoſe perſons, who are deſirous to have them in perfection, ſhould root out all thoſe plants whoſe flowers are not well marked, or at leaſt cut off their ſtems ſo ſoon as their flowers appear, leaving only the moſt beautiful to ſeed, that the farina of the plain flowers, may not impregnate the others, whereby the plants raiſed from their ſeeds may not be degenerated, of which too much care cannot be taken.

Theſe plants are all raiſed by ſowing the ſeeds, or parting the old roots, but the former method is chiefly practiſed; for the old roots are very apt to degenerate after they have blown two or three years, ſo as to become quite plain.

The ſeeds ſhould be ſown in a nurſery-bed in Auguſt or September, for the ſeeds which are kept till ſpring ſeldom grow well, or at leaſt remain in the ground a whole year. The ſpring following the plants will appear above ground, therefore ſhould be kept clear from weeds, and if the ſeaſon ſhould be dry, they ſhould be refreſhed with water, that they may gather ſtrength.

In the middle or latter end of May, theſe plants will be ſtrong enough to tranſplant; therefore ſome beds of good freſh undunged earth ſhould be prepared, planting them therein at eight or nine inches diſtance every way, keeping them clear from weeds, and refreſhing them with a little water, as they may require it.

In the following autumn, by which time the plants will have acquired ſtrength enough to flower the ſummer following, the roots ſhould be carefully taken up, and planted in the borders of the flower-garden; but where their roots are deſigned to be preſerved in perfection, all their flower-ſtems ſhould be cut off, as ſoon as the flowers are paſt, to prevent their degenerating by the commixture of the farina from other flowers.

But in order to be ſure of having no ſingle or bad flowers in the borders, you may ſuffer the plants to remain in the nurſery-beds until they have blown; at which time you may put a ſtick by each root you fancy to preſerve, or pull out all the ſingle or bad coloured ones, and throw them away, cutting off all the flowers from your beſt roots as ſoon as they have ſhewn themſelves, which will greatly add to the preſerving them fair in their colours.

In order to keep up a ſucceſſion of good flowers, freſh ſeeds ſhould be ſown every year; and if you can meet with a friend, at ſome diſtance, who is furniſhed with good flowers of this kind, it will be very advantageous to both parties, to exchange ſeeds once in two years, by which they will not be ſo apt to degenerate into plain colours.

In ſaving the ſeeds of the variegated columbines, great care ſhould be taken not to ſuffer any plain flowers to remain for ſeed, there being generally ſome plain flowers intermixed with the ſtriped ones on the ſame plant, and often in the ſame branches: theſe ſhould be cut off, for if they are permitted to ſeed, or if their farina mix and impregnate the ſtriped flowers, they will degenerate into plain colours; ſo that there cannot be too much care taken in ſaving the ſeeds, where the beauty of their flowers are regarded.

The Canada Columbine flowers almoſt a month before the other ſorts; for which reaſon it is preſerved in the gardens of the curious, though there is no great beauty in the flowers. There is another variety of this ſort, with taller flower-ſtems, which flowers a little after the other, but do not differ, either in the ſhape of its flowers or leaves from this, ſo I conclude they are but one diſtinct ſpecies. The Canada Columbines flower in April, and their ſeeds ripen the beginning of Auguſt. The other ſorts flower toward the end of May, and in cool ſeaſons will continue to produce flowers till the middle of July, and their ſeeds ripen toward the middle or end of September, according as the ſeaſon proves more or leſs favourable.

The firſt ſort is that which is directed for medicinal uſe in the diſpenſaries, but at preſent is very rarely ordered.

ARABIS. Lin. Gen. Plant. 732. Baſtard Tower Muſtard.

The CHARACTERS are,

The flower hath a four-leaved empalement, two of the oppoſite leaves being large, and the other two narrow; theſe fall off. The flower hath four petals in form of a croſs, which ſpread open; at the bottom of each is ſituated a reflexed nectarium fixed to the empalement, and between theſe ariſe ſix upright ſtamina, two of which are no longer than the flower-cup, the other four are much longer: theſe are crowned with heart-ſhaped ſummits. In the center is ſituated a taper germen, which is as long as the ſtamina, having no ſtyle, but the obtuſe ſtigma reſts upon it. This afterward becomes a narrow, long, compreſſed pod opening lengthways, having two valves and a thin partition, between which is lodged a row of flat ſeeds.

This genus of plants is ranged in Linnæus's fifteenth claſs, entitled Tetradynamia Siliquoſa: ſo called, becauſe the flowers have four ſtamina longer than the other two, and the ſeeds growing in long pods.

The SPECIES are,

1. ARABIS (*Thaliana*) foliis petiolatis lanceolatis integerrimis. Vir. Cliff. 64. *Baſtard Tower Muſtard, with whole ſpear-ſhaped leaves having foot-ſtalks.* Burſæ paſtoris ſimilis ſiliquoſa major. C. B. P. 108.
2. ARABIS (*Alpina*) foliis amplexicaulibus dentatis. Hort. Cliff. 335. *Baſtard Tower Muſtard, with indented leaves embracing the ſtalks.* Draba alba ſiliquoſa repens. C. B. P.
3. ARABIS (*Pendula*) foliis amplexicaulibus ſiliquis ancipitibus linearibus calycibus ſubpiloſis. Hort. Upſal. 191. *Baſtard Tower Muſtard with leaves embracing the ſtalks, narrow pods hanging two ways, and hairy flower-cups.* Turritis latifolia hirſuta ſiliquis pendulis. Amman. Ruth. 58.
4. ARABIS (*Turrita*) foliis amplexicaulibus ſiliquis decurvis planis linearibus calycibus ſubrugoſis. Hort. Upſal. 192. *Baſtard Tower Muſtard, with narrow, plain, hanging pods, and rough flower-cups.* Leucoium heſperidis folio. Tourn. Inſt. 221. *Stock Gilliflower with a leaf of Dame's Violet.*
5. ARABIS (*Lyrata*) foliis glabris, radicalibus lyratis, caulinis linearibus. Flor. Virg. 99. *Baſtard Tower Muſtard with ſmooth leaves, thoſe at the root lyre-ſhaped, but on the ſtalks linear.*
6. ARABIS (*Canadenſis*) foliis caulinis lanceolatis dentatis glabris. Flor. Virg. 100. *Baſtard Tower Muſtard, with ſpear-ſhaped, indented, ſmooth leaves.* Eruca Virginiana, bellidis majoris folio. Pluk. Alm. 136.

The firſt ſort is a low plant, ſeldom riſing more than four or five inches high, ſending out many ſhort branches on every ſide, terminated by ſmall white flowers growing alternately the moſt part of their length, each having four petals in form of a croſs, which are ſucceeded by long ſlender pods filled with ſmall round ſeeds. It grows naturally on ſandy dry ground, in many parts of England.

The ſecond ſort grows naturally in Iſtria, from whence I received the ſeeds; it is alſo a native of the Alps, and many other mountainous countries. This is a perennial plant, which increaſes by its creeping roots, which run obliquely near the ſurface of the ground, and ſend down roots at every joint. The leaves are collected into heads, ſpreading circularly like thoſe of the London Pride. Theſe are oblong, whitiſh, and indented on their edges; out of theſe heads ariſe the flower-ſtalks, which grow near a foot high, garniſhed with leaves placed alternately, which are broader at their baſe than thoſe which grow below, and cloſely embrace the ſtalks: the flowers grow in looſe bunches on the top; theſe are white, and have leaves in form of a croſs, which are ſucceeded by long flat pods, opening lengthways, having two cells, which are ſeparated by an intermediate partition, each having one row of flat reddiſh ſeeds.

This is a very hardy plant, ſo will thrive in any ſituation. It produces ſeeds in plenty, but as it multiplies ſo faſt by its creeping roots, few perſons are at the trouble to ſow the ſeeds. It flowers early in the ſpring, and having many ſtalks riſing from one root, they make a pretty variety in cold ſituations, where many finer plants will not thrive, ſo may have place in rural plantations among ſhrubs, where they will thrive with very little care.

The third ſort grows naturally in Siberia, from whence the ſeeds were brought to Peterſburgh. This is a perennial plant, which grows near a foot high; the leaves are broad, hairy, and indented on their edges; theſe cloſely embrace the ſtalks. The flowers grow alternately in looſe ſpikes, and are of a dirty white colour. Theſe are ſucceeded by long narrow pods, which are filled with flat brown ſeeds like the former, but the pods of this hang downwards two ways. It flowers early in ſpring, and perfects ſeeds very well, by which it may be propagated in plenty.

The fourth ſort grows naturally in Hungary, Sicily, and France. I have alſo found it growing wild upon ſome old walls at Cambridge and Ely, but the ſeeds might probably come out of the gardens where they were firſt planted. The plants of this kind, which grow on walls or ruins, continue much longer than thoſe which are ſown in gardens, where they ſeldom live longer than two years. The leaves of this ſort are long, broad, hairy, and a little waved on their edges; of a pale colour, and ſpread near the ground: from the center of theſe come out the ſtalks, which riſe about a foot and a half high, having ſeveral leaves growing alternately, which cloſely embrace them. Toward the top of the ſtalks, they divide into ſeveral ſmall branches, which are terminated by long looſe ſpikes of flowers, of a dirty white colour, each having four petals placed in form of a croſs. After the flowers are paſt, the germen becomes long flat pods, which turn backward at their extremity and open lengthways, having two rows of flat-bordered ſeeds, of a dark brown colour, ſeparated by a thin intermediate partition.

This ſort is eaſily propagated by ſeeds, which ſhould be ſown in the autumn; for thoſe which are ſown in the ſpring frequently miſcarry, or lie in the ground a whole year before they grow. When the plants are ſtrong enough to remove, they may be tranſplanted into a ſhady border, or in rural plantations, where no other care will be neceſſary, but to prevent their being overgrown by weeds. The plants flower in May, and their ſeeds ripen in July. There is little beauty in this plant, yet many perſons preſerve it in their gardens to make a variety.

The fifth ſort is annual, it grows naturally in North America; the leaves near the root are lyre-ſhaped, but thoſe on the flower-ſtalks are linear, placed alternately; both are ſmooth; the flower-ſtalks riſe near a foot high, and are terminated by white flowers, which are ſucceeded by ſlender pods.

The ſixth ſort was brought from Virginia; this is a biennial plant, whoſe lower leaves ſpread on the ground, theſe are deeply indented on their ſides; the flower-ſtalks riſe a foot high, ſuſtaining ſeveral yellow flowers placed ſcatteringly at the top, which are ſucceeded by pretty long flat pods, filled with ſeeds.

The two laſt mentioned ſorts have little beauty to recommend them, nor are their virtues known, therefore they are rarely admitted into any gardens except for variety. They are eaſily propagated by ſeeds, which if permitted to ſcatter on the ground, will produce plants in plenty on any ſoil, or in any ſituation.

ARACHIS, Earth, or Ground Nut.

The CHARACTERS are,

The empalement of the flower opens in two parts, the upper being cut into three at the extremity, the under one is hollow ending in a point, and longer than the other. The flower is of the butterfly kind, having four petals; the ſtandard is large, roundiſh, and plain; the wings are open and ſhorter than the ſtandard, the keel is little longer than the empalement, and turns back. The flower hath ten ſtamina, nine of which coaleſce, and the upper one ſtands off; theſe are no longer than the keel, crowned by round ſummits. In the center is ſituated an oblong germen, ſupporting an awl-ſhaped ſtyle, crowned by a ſingle ſtigma. The germen afterward turns to an oblong pod, containing two or three oblong blunt ſeeds.

This genus of plants is ranged in Linnæus's ſeventeenth claſs, entitled Diadelphia Decandria, from the flowers having ten ſtamina, which are in two bodies.

We have but one SPECIES of this plant, viz.

ARACHIS (*Hypogæa:*) Lin. Hort. Cliff. 353. *Earth or Ground Nut.* Arachidna quadrifolia villoſa flore luteo. Plum. Nov. Gen. 49.

The native country of this plant I believe is Africa, though at preſent, all the ſettlements in America abound with it; but many perſons who have reſided in that country affirm, they were originally brought by the ſlaves from Africa there, where they have been ſpread all over the ſettlements.

It multiplies very faſt in a warm country, but being impatient of cold, it cannot be propagated in the open air

air in England; therefore whoever has an inclination to cultivate this plant, muſt plant the ſeeds in a hot-bed in the ſpring of the year, keeping the glaſſes over the plants till the middle or end of June; after which time, if the weather prove warm, they may be expoſed to the open air by degrees. The branches of this plant trail upon the ground, and the flowers (which are yellow) are produced ſingle upon long foot-ſtalks; and as ſoon as the flower begins to decay, the germen is thruſt under ground, where the pod is formed and ripened; ſo that unleſs the ground is opened, they never appear: the negroes kept this a ſecret among themſelves, therefore could ſupply themſelves with theſe nuts unknown to their maſters. The roots of theſe plants are annual, but the nuts or ſeeds ſufficiently ſtock the ground in a warm country, where they are not very carefully taken up. In South Carolina there is great plenty of theſe nuts, which the inhabitants roaſt, and make uſe of as chocolate.

ARALIA, Berry-bearing Angelica.

The CHARACTERS are,

It is an umbelliferous plant with a globular umbel, having a ſmall involucrum; the empalement of the flower is ſmall, indented in five parts, and reſts upon the germen. The flower hath five oval petals, which are reflexed; it hath five awl-ſhaped ſtamina crowned by roundiſh ſummits; the round germen below the empalement ſupports five ſhort ſtyles, each of which is crowned by a ſingle ſtigma. The germen afterward turns to a roundiſh channelled berry, having five cells, each containing one oblong hard ſeed.

This genus of plants is ranged in the fifth ſection of Linnæus's fifth claſs, entitled Pentandria Pentagynia, the flowers having five ſtamina and five ſtyles.

The SPECIES are,

1. ARALIA (*Racemoſa*) caule folioſo herbaceo lævi. Hort. Upſal. 70. *Berry-bearing Angelica, with an herbaceous leafy ſtalk.* Aralia Canadenſis. Tourn. Inſt. R. H. 300.
2. ARALIA (*Nudicaulis*) caule nudo foliis ternatis. Hort. Cliff. 113. *Berry-bearing Angelica with a naked ſtalk.* Aralia caule nudo radice repente. Cold. Noveb. 66.
3. ARALIA (*Spinoſa*) arboreſcens caule folioliſque aculeata. Vir. Cliff. 26. *Tree Berry-bearing Angelica, whoſe ſtalk and leaves are prickly.* Aralia arboreſcens ſpinoſa. Vaill. Serm. *Angelica-tree*, vulgò.

The firſt ſort is pretty common in many gardens near London, but the ſecond is at preſent more rarely met with. Both theſe plants grow naturally in North America, from whence their ſeeds were brought to Europe. They are perennial plants, whoſe ſtalks decay in autumn, and new ones ariſe from their roots in the ſpring. The firſt grows three or four feet high, and divides into many irregular branches, garniſhed with ramoſe leaves, placed alternately; at the wings of theſe the flower-ſtalks are produced, which are terminated by round umbels of ſmall four-leaved flowers, of a whitiſh colour; theſe are ſucceeded by round channelled berries, which when ripe, are black. This flowers in July, and the ſeeds ripen in October.

The ſecond ſort riſes to near the ſame height as the former; the leaves of this have two trifoliate large lobes, which are ſawed on their edges. The flower-ſtalks ariſe between theſe immediately from the root, being naked, and are terminated by round umbels of flowers, in ſhape and colour like the firſt; theſe are ſucceeded by berries, which are ſmaller than thoſe of the other. This flowers toward the end of July, and the ſeeds ripen late in the autumn. The roots of this ſort were formerly brought over and ſold for Sarſaparilla, and at this time ſeveral of the inhabitants of Canada make uſe of it as ſuch, but it is very different from the true ſort.

Both theſe ſorts are eaſily propagated by ſeeds, which are generally produced in plenty. Theſe ſhould be ſown in the autumn ſoon after they are ripe, for thoſe which are ſown in the ſpring, never grow the ſame year, ſo that a whole ſeaſon is gained by the ſowing in autumn. When the plants appear, they muſt be kept clean from weeds during the ſummer; and in the autumn following, when their leaves decay, the roots may be taken up, and tranſplanted where they are to remain. They are very hardy plants, ſo may be planted in any ſituation; and as they grow naturally in woods, ſo they may be planted in wilderneſs quarters, under trees, where, although they have no great beauty, yet they will add to the variety.

Theſe two ſorts may alſo be propagated by parting of their roots; the beſt time for doing this is in the autumn, ſoon after their leaves decay. Theſe ſhould be planted pretty far aſunder, for their roots ſpread to a conſiderable diſtance, where they are left undiſturbed for ſome years.

The third ſort riſes with a woody ſtem to the height of eight or ten feet, dividing into ſeveral branches, garniſhed with branching leaves, which are compounded of many divaricated wings; the lobes of which are oblong, and the ribs of the leaves, as alſo the branches and ſtems of the plants, are armed with ſtrong crooked ſpines, which renders the places very difficult to paſs through where they grow in plenty. The flowers of this ſort are produced in large looſe umbels, at the extremity of the branches, and are of an herbaceous colour, ſo make no great figure, but the plants are preſerved in moſt of the curious gardens in England. It flowers in Auguſt, but the ſeeds do not ripen in this country.

This is propagated by ſeeds, which are eaſily procured from North America; but as they ſeldom arrive here till toward the ſpring, ſo the plants never come up the firſt year: therefore when the ſeeds arrive, they ſhould be ſown in pots, filled with light earth, and placed in a ſhady ſituation, where they may remain until the next autumn, being careful to weed the pots conſtantly; otherwiſe if weeds are permitted to grow till they are large, they cannot be taken out, without drawing up the ſeeds with their roots. In the autumn, the pots ſhould be plunged either into an old bed of tan, or in a warm border under the ſhelter of a hedge or wall; and if the winter proves ſevere, it will be proper to cover the pots with ſtraw or Peaſe-haulm, to prevent the froſt from penetrating deep into the ground. In March the pots ſhould be plunged into a moderate hot-bed, which will bring up the plants early, ſo that they will have more time to get ſtrength before the following winter. When the plants come up, they ſhould be frequently refreſhed with water, and conſtantly kept clean from weeds: in May they ſhould be inured to the open air, and when they are removed out of the bed, they ſhould have a ſhady ſituation. Theſe plants ſhould not be diſturbed the firſt ſeaſon, but as they are often injured by froſt when young, ſo in October the pots ſhould be placed under a frame, where they may be ſcreened from hard froſts, but in mild weather ſhould be conſtantly opened to enjoy the free air. The leaves of theſe plants fall away in the autumn, ſo that ſome perſons have ſuppoſed them dead, and have thrown them out of the pots, which every one ſhould be cautioned againſt. In the ſpring, before the plants begin to puſh, they ſhould be carefully ſhaken out of the pots, and ſeparated; part of them ſhould be planted ſingly into ſmall pots, and the other may be planted in a bed of light earth in a warm ſituation. If thoſe which are planted in the ſmall pots are plunged in a moderate hot-bed, it will greatly forward their growth; but they muſt be early inured to bear the open air, otherwiſe they will draw up weak. In the following ſummer they muſt have a ſhady ſituation, and the next winter ſhould be ſheltered again; the ſpring following they may be ſhaken out of the pots, and planted where they are deſigned to remain. Thoſe plants which were planted in the bed, will require protection from the froſt the firſt winter; therefore if the ſurface of the ground is covered with old tanners bark, it will prevent the froſt from penetrating to their roots; and if in hard froſts, ſome ſtraw, Peaſe-haulm, or any light covering is laid over the bed, it will ſecure their ſtems from being injured. The plants in the bed may remain there two years, by which time they will be ſtrong enough to tranſplant

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to the places where they are deſigned to grow. As theſe plants do not come out very early in the ſpring, ſo they often continue growing pretty late in the autumn, which cauſes the extreme parts of their ſhoots to be very tender, whereby they often ſuffer from the early froſts in autumn, which frequently kill the upper parts of the ſhoots; but as their woody ſtems are ſeldom injured, ſo they put out new branches below: and if in very ſevere winters the ſtems are deſtroyed, yet the roots will remain, and put out new ones the following ſummer, therefore they ſhould not be deſtroyed.

This plant may alſo be propagated by its roots, for as they ſpread far in the ground, ſo if they are laid open, and ſome of the ſtrongeſt are ſeparated from the plant and left in the ground, they will put out new ſtems and make new plants. Or if part of the roots are taken off and planted on a moderate hot-bed, they will puſh out ſtems in plenty, ſo may be increaſed with eaſe.

ARBOR, a tree, is defined to be a gemmiparous plant, with a ſingle trunk or ſtem, abounding with ſhoots. This is the only definition which conveys an idea whereby to diſtinguiſh a tree from a ſhrub, which is a gemmiparous plant, with many ſtems or trunks.

ARBOR CAMPHORIFERA. See LAURUS.

ARBOR CORAL. See ERYTHRINA.

ARBOR JUDÆ. See CERCIS.

ARBOREOUS [*Arboreus*, *Lat.* of, or belonging to, or of the nature of, trees.] An epithet which botaniſts apply to thoſe funguſes, or moſſes which grow on trees, in diſtinction from thoſe that grow on the ground; as Agaric, Jews-ear, &c.

ARBOURS [*Arboreta*, of *Arbor*, *Lat.* a tree.] Theſe were formerly in greater eſteem with us than at preſent; few gardens were without covered arbours, and ſhady ſeats; but of late they have been much rejected, and that not without good reaſon; for beſides the great expence in their firſt erecting, they were a continual charge keeping repaired; for the wet ſoaking through the leaves of the trees to the wood-work, was, by the continual ſhade, and for the want of free air, detained ſo long as to rot the wood (which, if wholly expoſed to the weather, would have laſted ſeven or eight) in two or three years; beſide, the ſeats are continually damp, and unhealthy: for which reaſon, covered ſeats or alcoves, are every where, at this time, preferred to them.

Arbours are generally made of lattice-work, either in wood or iron, and covered with Elms, Limes, Hornbeam; or with Creepers, as Honeyſuckles, Jaſmines, or Paſſion-flowers; either of which will anſwer the purpoſe very well, if rightly managed.

ARBUTUS, the Strawberry-tree.

The CHARACTERS are,

The flower hath a ſmall, obtuſe, permanent empalement, which is cut into five parts, upon which the germen ſits. The flower is of one leaf, ſhaped like a pitcher, and divided into five parts at the brim, which turn backward. It hath ten ſhort ſtamina, which are joined at the bottom to the flower leaf; theſe are crowned with bifid ſummits. At the bottom of the flower is ſituated the globular germen, ſupporting a cylindrical ſtyle, crowned by a thick blunt ſtigma. After the flower is paſt, the germen becomes an oval or round berry, having five cells, which are filled with hard ſeeds.

This genus of plants is ranged in the tenth claſs of Linnæus, entitled Decandria Monogynia, from the flowers having ten ſtamina and one ſtyle.

The SPECIES are,

1. ARBUTUS (*Unedo*) foliis glabris ſerratis, baccis polyſpermis, caule erecto arboreo. *Strawberry-tree with ſmooth ſawed leaves, berries having many ſeeds, and an upright trunk.* Arbutus folio ſerrato. C. B. P. 460.
2. ARBUTUS (*Andrachne*) foliis glabris integerrimis, baccis polyſpermis caule erecto arboreo. *Strawberry-tree with ſmooth entire leaves, berries full of ſeeds, and an erect woody ſtem.* Arbutus folio non ſerrato. C. B. P. 46. Andrachne Theophraſti. Cluſ. Hiſt. 48. *called Andrachne.*
3. ARBUTUS (*Acadienſis*) caulibus procumbentibus foliis ovatis ſubſerratis floribus ſparſis baccis polyſpermis. Lin. Sp. Plant. 395. *Arbutus with trailing ſtalks, oval leaves, ſomewhat indented, flowers growing looſely, and many ſeeds.* Vitis idæa Acadienſis foliis Alaterni. Tourn. Inſt.
4. ARBUTUS (*Alpina*) caulibus procumbentibus foliis rugoſis ſerratis. Flor. Lap. 161. *Arbutus with trailing ſtalks and rough ſawed leaves.* Vitis idæa foliis oblongis albicantibus. C. B. P. 470.
5. ARBUTUS caulibus procumbentibus foliis integerrimis. Flor. Lap. 162. *Arbutus with trailing ſtalks and entire leaves.*
6. ARBUTUS (*Uva Urſi*) caulibus diffuſis, foliis emarginatis. *Arbutus with diffuſed ſtalks and indented leaves.* Uva urſi. Cluſ. Hiſt. 1. p. 63. *Bear Berry.*

The firſt ſort grows naturally in Italy, Spain, and alſo in Ireland, and is now very common in the Engliſh gardens. Of this ſort there are the following varieties, viz. one with an oblong flower and oval fruit; another with a double flower, and a third with red flowers; but theſe being only ſeminal varieties, I have not mentioned them as ſpecies; though for the ſake of the curious, I ſhall give a farther account of them.

The ſecond ſort grows naturally in the eaſt, particularly about Magneſia, where it is ſo plenty, as to be the principal fuel uſed by the inhabitants of the country. This grows to a middle ſized tree; the branches are irregular, and are garniſhed with large oval leaves, ſomewhat like thoſe of the Bay-tree, but not quite ſo long; theſe are ſmooth and entire, having no ſerratures on their edges; the flowers are ſhaped like thoſe of the common Arbutus, but grow thinly on the branches. The fruit is oval, and of the ſame colour and conſiſtence with the common ſort, but the ſeeds of this are flat, whereas thoſe of the common ſort are pointed and angular. Tournefort enumerates three other varieties of this tree, which he obſerved in the Levant, one with ſawed leaves, which is now in many Engliſh gardens, and paſſes for the Andrachne: another with a large oblong fruit, and a third with large compreſſed fruit: but it is doubtful if they are not accidental varieties, which have been produced from ſeeds of the firſt.

The common Strawberry-tree is too well known to require any deſcription of it here, being at preſent in moſt of the Engliſh gardens, and is one of the greateſt ornaments to them in the months of October and November, that being the ſeaſon when the trees are in flower, and the fruit of the former year is ripe, for the fruit is a whole year growing to perfection; ſo that the fruit which is produced from the flowers of one year, do not ripen till the bloſſoms of the ſucceeding year are fully blown; ſo that when there is plenty of fruit and flowers upon the trees, they make a goodly appearance, and at a ſeaſon when moſt other trees are paſt their beauty.

Thoſe trees which have large oval fruit, make the greateſt figure, the flowers of this being larger, and oblong. The ſort with double flowers is a curioſity, but as the flowers have only two orders of leaves, ſo they make no great appearance; nor do the trees produce fruit in any plenty, therefore the other is more preferable. The ſort with red flowers makes a pretty variety, when intermixed with the other; for the outſide of them are of a fine red colour at their firſt appearance, and afterward they change to purple before they fall off. The fruit of this is the ſame with the common ſort. All theſe varieties are preſerved, by inarching or grafting them upon the common Arbutus, for the ſeeds of either do not produce the ſame kind; though from the ſeeds of the oval fruit, there is generally many more of the ſame produced, than from the ſeeds of the common ſort.

The beſt method to propagate the Arbutus is from ſeeds; therefore when the fruit is perfectly ripe, it ſhould be gathered and mixed with dry ſand, to preſerve them till the time for ſowing them; the ſureſt method of raiſing the plants, is to ſow the ſeeds in

pots,

pots, which ſhould be plunged into an old bed of tanners bark, which has loſt its heat, covering the bed with glaſſes, &c. to keep out froſt; this ſhould be done in December, if the ſeeds are good, and as the ſpring advances, the pots are refreſhed with water, the plants will come up the beginning of April, when they ſhould be frequently but ſparingly watered, and conſtantly kept clean from weeds.

As the ſummer advances, if the plants are ſhaded in the heat of the day, it will greatly promote their growth; but in warm weather they muſt be open all night to receive the dew, ſo ſhould only be covered in the middle of the day: with this management, the plants will riſe to the height of five or ſix inches the firſt ſummer. The beginning of October, theſe plants may be ſhaken out of the pots, and their roots carefully ſeparated, planting them ſingly in ſmall pots filled with light earth; then plunge the pots into an old bed of tanners bark, under a common frame, obſerving to ſhade them from the ſun in the middle of the day, and to give them water as they may require: in this bed the pots ſhould remain during the winter, obſerving to expoſe the plants to the open air, at all times when the weather is favourable; but in froſty weather they muſt be covered, otherwiſe they will be in danger if the ſeaſon proves ſevere. The ſpring following the plants may be removed to a very gentle hot-bed, which will require no other covering but mats. This will enable them to make ſtrong ſhoots early in the ſummer, whereby they will be in a better condition to bear the cold of the ſucceeding winter: in this bed the plants may continue moſt part of the ſummer, for if the pots are taken out and ſet upon the ground, the ſmallneſs of their ſize will occaſion the earth in them to dry ſo faſt, that watering will ſcarcely preſerve the plants alive; but if they are kept growing all the ſummer, they will be more than a foot high by the next autumn: but it will be adviſable to ſcreen them from the froſt during their continuance in pots, by plunging them into the ground in a warm place, and covering them with mats in bad weather.

When the plants are grown to be two or three feet high, you may ſhake them out of the pots, and plant them in the open ground in the places where they are to remain; but this ſhould be done in April, that they may have taken good root before the winter, which would be apt to damage them if newly planted; and as all the earth about their roots may be thus preſerved, there will be no fear of ſucceeding at this ſeaſon.

Theſe plants are tolerably hardy, and are ſeldom hurt, except in extreme hard winters, which many times kill the young and tender branches, but rarely deſtroy the roots; therefore, however dead they may appear after a hard winter, yet I would adviſe the letting them remain till the ſucceeding ſummer has ſufficiently demonſtrated what are living and what are dead; for the winters anno 1728-9, and 1739-40, gave us great reaſon to believe moſt of the trees of this kind were deſtroyed; and many people were ſo haſty, as to dig up or cut down, many of their trees; whereas all thoſe people who had patience to let them remain, found that ſcarce one in five hundred failed to come out again the next ſummer, and many of them made handſome plants that ſeaſon.

This tree delights in a moiſt ſoil, for when they are planted in dry ground, they ſeldom produce much fruit: the flowers of this tree being produced in autumn, if the winter proves ſevere, are generally deſtroyed, which has occaſioned their producing very little fruit in England for ſeveral years: therefore, in order to obtain fruit, the trees ſhould be placed in a warm ſituation; and where the ground is not naturally moiſt, there ſhould be a good quantity of loam and rotten neat's dung laid about their roots; and if the ſpring ſhould prove dry, they muſt be plentifully watered, in order to have plenty of fruit.

The very beſt ſeaſon for tranſplanting of the Arbutus is in September, at which time the bloſſoms are beginning to appear; and at that ſeaſon, if it ſhould prove very dry and they are kept moiſt, they will take root very ſoon; but toward the beginning of November, their roots ſhould be well covered with mulch, to keep out the froſt.

The third ſort grows naturally in Acadia, and other northern parts of America, upon ſwampy land, which is frequently overflowed with water; this is a low buſhy ſhrub, with ſlender trailing branches, which are garniſhed with oval leaves, a little ſawed on their edges; the flowers come out from the wings of the leaves, growing in thin looſe bunches. The fruit of this ſort is never produced in England, and it is with great difficulty the plants are kept alive here.

The fourth ſort grows naturally on the Alps, and the Helvetian mountains. This never riſes high, but ſends out from the root many ſlender branches, which trail upon the ground, garniſhed with oblong rough leaves, of a pale green colour; the flowers are produced from the wings of the leaves, upon long ſlender foot-ſtalks, and are ſucceeded by berries about the ſize of the common black Cherry, which are firſt green, afterward red, and when ripe they are black. Theſe are of a pleaſant taſte, ſo are frequently eaten by the inhabitants of thoſe countries where they grow naturally. This is alſo a very difficult plant to keep alive in gardens, for it is an inhabitant of bogs, growing among moſs, where the ground is never dry.

The fifth ſort grows naturally upon the mountains in Spain, and in moſt of the northern parts of Europe. The branches of this trail on the ground, which are cloſely garniſhed with ſmooth thick leaves of an oval form, placed alternately; the flowers are produced in ſmall bunches toward the extremity of the branches, which are ſhaped like thoſe of the common ſort, but are ſmaller; and are ſucceeded by berries, of the ſame ſize with thoſe of the former ſort, which are red when ripe.

There are few of theſe plants in the Engliſh gardens, for as they are inhabitants of very cold countries, where they are covered with ſnow all the winter, and growing upon bogs among moſs, ſo when they are brought into a garden, they ſeldom continue long, nor do they thrive with the utmoſt care; for in places where artificial bogs have been contrived to receive theſe plants, they have been preſerved two or three years, and then have periſhed; ſo that unleſs the place where they are planted is naturally boggy, there is little hopes of their ſucceeding long.

The ſixth ſort grows naturally upon Mount Cenis in Italy, and upon ſome mountains in Spain; this hath woody ſtalks which riſe two or three feet high, dividing into many diffuſed branches, cloſely garniſhed with roundiſh fleſhy leaves, which are indented at the top; the flowers are produced in a racemus toward the end of the branches, which are ſhaped like thoſe of the Strawberry-tree, of an herbaceous colour, ſtriped with purple. The plants of this kind are very rare in England, nor is this ſort much known among botaniſts, moſt of whom have ſuppoſed the fifth to be the ſort mentioned by Cluſius, in which they are greatly miſtaken.

The Adrachne is at preſent very rare in England; this may be propagated in the ſame manner as hath been directed for the common Arbutus, but as there are no plants in this country which produce fruit at preſent, the ſeeds muſt be procured from the Levant, where they may be had in plenty. As the leaves of this tree are larger than thoſe of the common Arbutus, the trees make a finer appearance, therefore deſerve our care to cultivate them, eſpecially as they will bear the open air when the plants are become woody; for while they are young, they are impatient of much froſt, therefore ſhould be preſerved in pots three or four years, till they have obtained ſtrength, and may then be planted in a warm ſituation and on a dry ſoil, for this ſort will not thrive in wet ground.

ARCTIUM. Lin. Gen. 830. Lappa. Tourn. Inſt. R. H. Burdock.

The CHARACTERS are,

The empalement of the flower is ſcaly, each ſcale ending in a long thorn which is reflexed at the point. The flower is compoſed of many florets, which are tubulous, uniform, and of one leaf. The tube is long and ſlender, cut into five narrow ſegments at the top: theſe have each five ſhort ſlender ſtamina, which are crowned by cylindrical ſummits. The germen is ſituated at the bottom of the tube, having a hairy tip, ſupporting a long ſlender ſtyle, crowned by a bifid reflexed ſtigma; the germen afterward becomes a ſingle, pyramidal, angular ſeed, crowned with down.

This genus of plants is ranged in the firſt ſection of Linnæus's ſeventeenth claſs, entitled Syngeneſia Polygamia Æqualis, there being an equal number of female and hermaphrodite flowers included in one common empalement.

The SPECIES are,

1. ARCTIUM (*Lappa*) foliis cordatis inermibus petiolatis capitulis majoribus ſparſis. *Burdock with heart-ſhaped leaves without prickles, having ſoot-ſtalks, and large heads growing ſcatteringly.*
2. ARCTIUM (*Perſonata*) foliis cordatis inermibus, capitulis minoribus compactis. *Burdock with heart-ſhaped leaves without ſpines, and ſmall heads growing cloſe together.*
3. ARCTIUM (*Tomentoſis*) foliis cordatis inermibus, capitulis tomento-reticulatis. *Burdock with heart-ſhaped leaves without ſpines, and woolly netted leaves.*

The two firſt ſorts are common weeds, growing on the ſides of roads and foot-paths in moſt parts of England, and are not admitted into gardens. The firſt is ordered for medicinal uſe by the college of phyſicians, therefore I have inſerted it here: the ſecond is by many ſuppoſed to be only a variety of the firſt, but I have for ſeveral years ſown the ſeeds of both ſorts in the Chelſea garden, where they have conſtantly retained their difference, ſo may be allowed to be diſtinct ſpecies. The firſt is titled by Caſpar Bauhin, Lappa major, ſive Arctium Dioſcorides. Pin. 192. *Greater Burdock*, or *Arctium of Dioſcorides*. The ſecond is titled by Vaillant, Lappa vulgaris capitulo minore. Act. Par. 1718. *Common Burdock with a ſmall head.*

The third ſort is not a native of England, but grows naturally on the Apennine mountains. The leaves of this are like thoſe of the common ſort, but are whiter on their under ſide; the heads are more compact, and the florets are of a bright red colour; but the greateſt difference is in their empalements, which in this ſort are beautifully netted with a fine down all over. This is alſo ſuppoſed to be only a variety of the common ſort, but I have cultivated it above forty years, during which time it has never varied, ſo that it is certainly a diſtinct ſpecies. This is by Caſpar Bauhin titled, Lappa major montana capitulis tomentoſis. Pin. 198. *Greater Mountain Burdock with woolly heads.*

As theſe plants are ſeldom admitted into gardens, it is needleſs to ſay any thing of their culture; but where they are troubleſome weeds, it may not be amiſs to mention, that their roots laſt but two years, ſo may be deſtroyed with leſs trouble than ſuch as have perennial roots; for if they are cut up before they ſeed, in two or three years they may be entirely rooted out; for the plants which come up from ſeed, do not flower till the ſecond year, and when the ſeeds are perfected their roots decay.

ARCTOTIS. This hath been uſually known under the title of Anemonoſpermos, from the reſemblance the ſeeds of theſe plants have to that of the Anemone.

The CHARACTERS are,

The common empalement is roundiſh and ſcaly, thoſe on the lower part are looſe and awl-ſhaped, the middle oval, and thoſe on the top concave. The flower is compoſed of many female florets which are ranged on the border; theſe have one ſide ſtretched out like a tongue, which are called the rays, having an oval four-cornered germen ſituated in their center, crowned with down, ſupporting a ſlender ſtyle, crowned by two oval ſtigma; the germen afterward becomes a ſingle roundiſh ſeed, covered with a ſoft down. The middle or diſk of the flower is compoſed of hermaphrodite florets, which are funnel-ſhaped, and divided at the top into five parts, which are reflexed; theſe have five ſtamina, crowned by ſhort ſummits; in the center is placed a ſmall germen, ſupporting a cylindrical ſtyle with a ſingle ſtigma. Theſe flowers are abortive.

This genus of plants is ranged in the fourth ſection of Linnæus's ſeventeenth claſs, entitled Syngeneſia Polygamia Neceſſaria, the flowers of this ſection being compoſed of female and hermaphrodite florets; in ſome ſpecies the florets in the diſk are fertile, and in others they are ſterile.

The SPECIES are,

1. ARCTOTIS (*Triſtis*) floſculis radiantibus vicenis tripartitis. Lin. Sp. 1306. *Arctotis with the rays of the flower compoſed of florets cut into three ſegments.* Anemonoſpermos Afra, foliis & facie taraxaci incanis. Breyn. Prod. t. 15.
2. ARCTOTIS (*Anguſtifolia*) floſculis radiantibus fertilibus, foliis lanceolatis integris dentatis, Lin. Sp. 1306. *Arctotis whoſe florets in the rays are fertile, and ſpear-ſhaped, entire, indented leaves.* Anemonoſpermos Afra, folio ſerrato rigido flore intus ſulphureo extus puniceo. Boerh. Ind. Alt. 1. p. 1. 100.
3. ARCTOTIS (*Aſpera*) floſculis radiantibus fertilibus, foliis pinnato-ſinuatis villoſis laciniis oblongis dentatis. Lin. Sp. 1307. *Arctotis whoſe rays of the flower are fertile and woolly, with ſinuated, oblong, indented leaves.* Anemonoſpermos Afra, folio Jacobææ tenuiter laciniato flore aurantio pulcherrimo. Boerh. Ind. Alt. 1. p. 100.
4. ARCTOTIS (*Calendula*) floſculis radiantibus ſterilibus duodenis ſubintegris, foliis lyratis nigro denticulatis. Lin. Sp. 1306. *Arctotis whoſe rays of the flower are ſterile and intire, and the leaves are lyre-ſhaped and indented.* Anemonoſpermos Africana Jacobææ maritimæ foliis flore ſulphureo. Com. Rar. 36.
5. ARCTOTIS (*Plantaginea*) floſculis radiantibus fertilibus, foliis lanceolato-ovatis nervoſis decurrentibus amplexicaulibus. Lin. Sp. 1306. *Arctotis whoſe rays of the flower are fertile, and oval, ſpear-ſhaped, nervous, running leaves embracing the ſtalks.* Anemonoſpermos Afra, folio plantaginis, florum radiis intus aureis extus puniceis. Boerh. Ind. 1. p. 100.
6. ARCTOTIS (*Acaulis*) pedunculis radicalibus, foliis lyratis. Lin. Sp. 1306. *Arctotis whoſe foot-ſtalks ariſe from the root, and the leaves are lyre-ſhaped.* Anemoſpermos Africana, folio plantiginis flore ſulphureo. Com. Rar. 35.
7. ARCTOTIS foliis pinnato-laciniatis criſpis caule ramoſo fruticoſo. *Arctotis with winged, jagged, curled leaves, and a branching ſhrubby ſtalk.* Anemonoſpermos Africana foliis Cardui benedicti florum radiis intus albicantibus. Hort. Amſt. 2. 45.
8. ARCTOTIS (*Paleacea*) floſculis radiantibus ſterilibus, paleis floſculos diſci æquantibus, foliis pinnatis linearibus. Amœn. Acad. 6. Afr. 84. *Arctotis whoſe rays of the flower are barren, the ſcales of the flowers in the diſk equal, and linear winged leaves.* After foliis integris anguſtis, flore magno luteo. Burm. Afr. 176.

Theſe plants are natives of the country about the Cape of Good Hope, from whence they have been brought to ſome curious gardens.

The firſt ſort here mentioned is an annual plant, which may be ſown upon a warm border of light earth in the open air, in the middle of April, where they are deſigned to remain; theſe flower in Auguſt, and if the ſeaſon proves favourable, they will perfect ſeeds very well, and the plants will grow much ſtronger than thoſe raiſed upon a hot-bed; but, as in cold ſeaſons theſe may fail to perfect their ſeeds, it will be a ſecure method to raiſe ſome upon the hot-bed, which never fails to perfect ſeeds, provided they are not treated too tenderly.

The ſecond, third, fourth, and ſeventh ſorts, grow to the height of four or five feet, ſending forth many branches; therefore will require to be frequently pruned, to keep them in tolerable order, eſpecially the ſeventh, which ſends forth ſtrong rambling ſhoots, when their roots are not much confined in the pots, but more ſo when they are duly watered.

Theſe

Theſe are ſeldom deſtitute of flowers the whole year, unleſs the winter is ſevere, which renders them more valuable than thoſe which flower at one ſeaſon only; for all thoſe plants which flower in the winter-ſeaſon, make a fine variety in the green-houſe; and when the plants are ſet abroad in ſummer, their flowers being at that ſeaſon produced in greater plenty, they add to the beauty of a garden.

The ſhrubby ſorts are propagated by planting cuttings in a bed of light freſh earth, in any of the ſummer months, obſerving to ſhade them from the heat of the ſun until they have taken root, as alſo to refreſh them often with water; and in ſix weeks after planting, they will be rooted ſufficiently, at which time they ſhould be tranſplanted into pots filled with freſh earth, ſetting the pots in a ſhady place until the plants are new rooted; after which time they ſhould be placed in the open air until the latter end of October, or later, according as the weather is favourable, when they muſt be removed into the green-houſe, where they ſhould be placed as near the window as poſſible, that they may have a good quantity of free air at all times, when the weather is mild; nor ſhould they be over-hung by other plants, which would occaſion them to take a mouldineſs, and rot; they muſt alſo be frequently refreſhed with water, giving it them plentifully in mild weather, otherwiſe their leaves and branches will hang and wither; in ſummer they can ſcarce have too much water given them. They will alſo require to be ſhifted into other pots two or three times at leaſt every ſummer, and the pots ſhould be frequently removed, to prevent the plants from ſtriking their roots through the holes of the pots into the ground, which they are very apt to do, then they will ſhoot very vigorouſly; but when theſe roots are torn off, by removing the pots, the plants are often killed.

All theſe plants ſhould be frequently renewed by cuttings, becauſe the old plants are ſubject to decay in winter; therefore if young plants are not annually raiſed, the ſpecies may ſoon be loſt.

If the green-houſe in which theſe plants are placed in winter is ſubject to damps, it will be very difficult to preſerve ſome of the ſorts; for when the windows are kept cloſe, the tender parts of their ſhoots are very ſubject to a mouldineſs, which will ſoon cauſe the plants to decay, if it is not conſtantly cleaned off, and free air admitted to dry off the damps.

ARCUATION [from *arcuo*, *Lat.* to bend or bow like an arch;] the method of raiſing trees by layers.

The firſt thing that is to be done, is, to procure ſtrong mother plants, which are uſually called ſtools. It is no matter whether the trees be crooked, or otherwiſe deformed. They are to be planted in a border ſix feet wide, and in a ſtrait line ſix feet aſunder.

The border muſt be well trenched, or dug, and cleared from all roots, clods, ſtones, or any other obſtructions. Theſe trunks or ſtools being planted in this trench, will throw out a great many ſhoots according to their ſtrength, which may be laid about the Michaelmas following: in order to this, the ground round each ſtool ſhould be carefully dug, breaking the clods and picking out the ſtones as before. Then the ſhoots ſhould be bent down in arches, and put into the ground about three inches deep; and to keep them in this ſituation, each ſhould have a forked ſtick drove into the ground over the part of the ſhoot immerſed, turning the extremity of each ſhoot upward.

When the branches are thus laid round the ſtool, and pegged faſt down, the branches, or ſhoots, will be covered all over, except the very top. Some perſons give the branches a twiſt, in order to make them take root the ſooner. Others ſlit ſuch of the ſhoots as are not apt to take root without, in the ſame manner as is practiſed in laying of Carnations, which is generally a ſure way; and if they are afterward mulched, it will be of uſe to keep out the froſt in winter, and alſo to keep the ground moiſt the following ſpring and ſummer.

About the end of September following they may be opened and examined, to ſee if they have taken root or not, which it is very probable they will have done; but if not, they muſt be let alone, to lie till the next autumn, when they are to be taken up, and planted in the nurſery.

This may be done to the Dutch, Witch, and Engliſh Elms; the Abele, Lime, Alder, Platanus, and many ſorts of evergreen trees and flowering ſhrubs.

AREA is the internal capacity or content of any given boundary or limits, of what figure or ſhape ſoever it be.

ARGEMONE [ſo called from Ἀργεμα, a diſeaſe in the eye, which this plant is ſaid to cure; it is alſo called the Infernal Fig, becauſe the capſule pretty much reſembles a Fig, and from its aſperity,] Prickly Poppy.

The CHARACTERS are,

The flower hath a three-leaved empalement, which falls off; it hath five roundiſh petals, which ſpread open, and are larger than the empalement; in the center is ſituated an oval five-cornered germen, crowned by a large obtuſe ſtigma, which is permanent, divided into five parts, attended by a great number of ſtamina, crowned by oblong erect ſummits; the germen afterward becomes an oval ſeed-veſſel, having five angles, and as many cells, which are filled with ſmall rough ſeeds.

This genus of plants is ranged in Linnæus's thirteenth claſs, entitled Polyandria Monogynia, the flowers having many ſtamina and one germen.

We have but one SPECIES of this genus, viz.

ARGEMONE (*Mexicana*) capſulis quinque valvibus, foliis ſpinoſis. Lin. Sp. 727. *Argemone whoſe capſule hath five valves, and the leaves are prickly; or Pickly Poppy.* Papaver ſpinoſum. C. B. P. 171.

This is an annual plant, which is very common in moſt parts of the Weſt-Indies, and is, by the Spaniards, called Fico del Inferno, or the Devil's Fig; there is no great beauty or uſe in this plant that I know of, but whoever hath a mind to cultivate it, ſhould ſow it on a bed of light earth, in the ſpring, where it is to remain; and if it comes up too thick, the plants muſt be thinned to four inches diſtance, where, when once it has ſhed its ſeed, there will not want a ſupply of plants for ſeveral years after. I have been informed that gumbouge is made from the juice of this plant, but how true I cannot take upon me to determine.

ARGIL [*Argilla*, *Lat.* a ſort of white earth like chalk, but more brittle,] Potters Clay.

ARIA THEOPHRASTI. See CRATÆGUS.

ARISARUM. See ARUM.

ARISTA, of corn, is that ſharp-pointed needle that ſtands out from the huſk or hoſe of the grain, called the beard or awn of corn.

ARISTOLOCHIA, [Ἀριſτολοχία from ἄριſτος, beſt, and λοχεία, Child Birth, becauſe ſuppoſed to be of foreign uſe on that occaſion.] Birthwort.

The CHARACTERS are,

The flower hath no empalement; it is of one leaf, which is unequal; the baſe is ſwelling and globular, afterward is extended into a cylindrical tube, which ſpreads at the brim, where the lower part is ſtretched out like a tongue. It hath no ſtamina, but there are ſix ſummits which join the under part of the ſtigma: the oblong angular germen ſits under the flower, ſupporting a concave globular ſtigma, divided into ſix parts; the germen afterward turns to a large ſeed-veſſel, differing in form, which opens in ſix cells, which are filled with ſeeds, for the moſt part compreſſed.

This genus of plants is ranged in the fifth ſection of Linnæus's twentieth claſs, entitled Gynandria Hexandria, the flowers being male and female in the ſame ſpecies, having no ſtamina or pointal, and ſix ſummits, which reſt on the receptacle.

The SPECIES are,

1. ARISTOLOCHIA (*Rotunda*) foliis cordatis, ſubteſſilibus obtuſis, caule infirmo, floribus ſolitariis. Lin. Sp. Plant. 962. *Birthwort with blunt heart-ſhaped leaves growing cloſe, a weak ſtalk, and flowers growing ſingly.*

ſingly. Ariſtolochia rotunda flore ex purpurâ nigro. C. B. P. 307.

2. Aristolochia (*Longa*) foliis cordatis petiolatis integerrimis obtuſiuſculis, caule infirmo floribus ſolitariis. Lin. Sp. Plant. 962. *Birthwort with entire, heart-ſhaped, blunt leaves, having ſoot-ſtalks, a weak ſtalk, and flowers growing ſingly.* Ariſtolochia longa vera. C. B. P. 307.

3. Aristolochia (*Clematitis*) foliis cordatis caule erecto floribus axillaribus confertis. Hort. Upſal. 279. *Birthwort with heart-ſhaped leaves, an upright ſtalk, and flowers growing in cluſters from the ſide.* Ariſtolochia clematitis recta. C. B. P. 307.

4. Aristolochia (*Piſtolochia*) foliis cordatis, crenulatis petiolatis, floribus ſolitariis. Lin. Sp. Plant. 962. *Birthwort with heart-ſhaped indented leaves, having ſoot-ſtalks, and flowers growing ſingly.* Ariſtolochia piſtolochia dicta. C. B. P. 307.

5. Aristolochia (*Sempervirens*) foliis cordato-oblongis undatis, caule infirmo, floribus ſolitariis. Lin. Sp. Plant. 961. *Birthwort with oblong, heart-ſhaped, waved leaves, a weak ſtalk, and flowers growing ſingly.* Ariſtolochia piſtolochia dicta Cretica foliis ſmilacis ſempervirens. H. L.

6. Aristolochia (*Serpentaria*) foliis cordato-oblongis planis, caulibus infirmis flexuoſis, teretibus floribus ſolitariis. Lin. Sp. Plant. 961. *Birthwort with plain, oblong, heart-ſhaped, flexible, weak ſtalks, and flowers growing ſingly.* Ariſtolochia piſtolochia ſive ſerpentaria Virginiana. Pluk. Alm. 50. *Virginia Snakeroot.*

7. Aristolochia (*Arboreſcens*) foliis cordato-lanceolatis caule erecto fruticoſo. Lin. Sp. Plant. 960. *Birthwort with ſpear-ſhaped leaves in form of a heart, and an upright ſhrubby ſtalk.* Ariſtolochia polyrrhizos auriculatis foliis Virginiana. Pluk. Alm. 50.

8. Aristolochia (*Indica*) foliis cordato-oblongis caule volubili pedunculis multifloris. Flor. Zeyl. 323. *Birthwort with oblong heart-ſhaped leaves, a twining ſtalk, and many flowers upon each foot-ſtalk.* Ariſtolochia ſcandens odoratiſſima floris labello purpureo ſemine cordato. Sloan. Cat. Jam. 60. *Contrayerva of Jamaica.*

9. Aristolochia (*Hirta*) foliis cordatis obtuſiuſculis hirtis floribus ſolitariis pendulis recurvatis ſubtruncatis. Lin. Sp. 1365. *Hairy Birthwort with obtuſe heart-ſhaped leaves, and hanging recurved flowers growing ſingly, formed like a lip.* Ariſtolochia longa ſubhirſuta folio oblongo flore maximo. Tourn. Cor. 8.

10. Aristolochia (*Scandens*) foliis cordatis petiolis longiſſimis, caule ſcandente, floribus terminalibus pedunculis longiſſimis. *Birthwort with a climbing ſtalk, heart-ſhaped leaves with very long foot-ſtalks, and flowers growing at the end of the branches upon very long foot-ſtalks.*

11. Aristolochia (*Conferta*) foliis cordatis petiolatis, caule ſcandente, floribus axillaribus confertis. *Birthwort with heart-ſhaped leaves, a climbing ſtalk, and flowers growing in cluſters from the wings of the ſtalk.*

12. Aristolochia (*Repens*) foliis lanceolatis ſeſſilibus ſubhirſutis, caule erecto floribus ſolitariis longiſſimis. *Birthwort with ſpear-ſhaped hairy leaves growing cloſe to the branches, an upright ſtalk, and very long flowers growing ſingly.* Ariſtolochia erecta flore atro purpureo foliis anguſtis radice repente. Houſt. MSS.

13. Aristolochia (*Maxima*) foliis oblongo-ovatis obtuſis integerrimis, caule ſcandente floribus terminalibus, fructibus hexangularibus maximis. *Birthwort with a climbing ſtalk, oblong, oval, entire, blunt leaves, flowers growing at the ends of the branches, and very large fruit with ſix angles.*

The firſt and ſecond ſorts grow naturally in the ſouth of France, in Spain, and Italy, from whence their roots are brought for medicinal uſe. The roots of the firſt ſort are roundiſh, and grow to the ſize of ſmall Turneps, in ſhape and colour like the roots of the common Cyclamen; the roots of which are frequently ſold in the markets for thoſe of the round Birthwort, which at firſt may have been occaſioned by the ſuppoſed virtues of the roots of the Cyclamen. This ſends out three or four weak trailing branches, which lie on the ground where they are not ſupported, and extend to the length of two feet; the leaves are heart-ſhaped, and rounded at their extremity; theſe are placed alternately on the ſtalks, and cloſe to the foot-ſtalks of the leaves, the flowers come out ſingly, at every leaf, toward the upper part of the ſtalk. They are of a purpliſh black colour, and ſhaped like thoſe of the other ſorts, and are frequently ſucceeded by ſeed-veſſels, having ſix cells, which are full of flat ſeeds. The flowers appear in June and July, and the ſeeds ripen in autumn.

The ſecond ſort hath long tap roots, ſhaped like thoſe of Carrots; theſe ſend out weak trailing branches, which extend little more than a foot; the leaves of this ſort are paler, and have longer foot-ſtalks than the firſt, placed alternately, and the flowers come out from the wings of the leaves like the other, which are not ſo long, and are of a pale purple colour: they are ſometimes ſucceeded by oblong ſeed-veſſels, having ſix cells filled with compreſſed ſeeds. The ſtalks of both theſe ſorts decay in the autumn, and new ones are produced in the ſpring.

They are both propagated by ſeeds, which ſhould be ſown in the autumn, in pots filled with light earth, and placed under a frame, to be ſcreened from the froſt; but the glaſſes ſhould be taken off at all times when the weather is mild. If theſe pots are put into a gentle hot-bed in March, it will bring up the plants much ſooner than they otherwiſe would riſe. As the ſeaſon advances, the plants ſhould be inured by degrees to bear the open air: when the pots are taken out of the bed, they muſt be placed where they may enjoy the morning ſun, but ſcreened from it in the heat of the day. Gentle refreſhings of water muſt be in dry weather given to the plants during the ſummer, but in the autumn, when their ſtalks begin to decay, they muſt have little wet. In the winter the pots muſt be ſheltered as before; and in March, before the roots begin to ſhoot, they ſhould be tranſplanted into ſeparate ſmall pots filled with light earth, and ſet under the frame, where they ſhould remain till ſpring; then they may be removed into the open air, and treated in the ſame manner as in the former ſummer, and ſheltered alſo the following winter. The next ſpring they may be turned out of the pots, and planted in a warm border, where, during the ſummer, they will require no other care but to keep them clean from weeds; and in the autumn when their ſtalks are decayed, if the border is covered with old tanners bark to keep out the froſt, the roots will be ſecured; but where this care is not taken, the roots are frequently killed by froſt. With this management the roots will thrive much better than thoſe which are kept in pots, and continue longer; and when they are three years old, they will flower and produce plenty of ſeeds, whereas thoſe in pots ſeldom perfect their ſeeds in England.

When the ſeeds of theſe plants are ſown in the ſpring, the plants will not appear till the ſpring following; ſo that a whole ſeaſon is loſt, and many times they fail, therefore it ſhould always be ſown in the autumn.

The third ſort grows naturally in France, Spain, Italy, and Hungary, but is preſerved in ſome of the Engliſh gardens, becauſe it is ſometimes uſed in medicine. This is a terrible plant for creeping at the root; ſo that if once it has taken in a garden, it will be difficult to extirpate again, and will over-run whatever plants grow near it; therefore it ſhould be planted in ſome abject part of the garden by itſelf, for it will thrive in almoſt any ſoil or ſituation.

The fourth ſort grows wild in Spain, Italy, and the ſouth of France; but in England it is preſerved, for variety, in botanic gardens. The plants of this ſort muſt be planted in pots filled with light rich earth, and ſheltered from ſevere cold in winter, otherwiſe they will not live; but they ſhould have as much free air as poſſible in mild weather. This produces flowers every year, but never perfects its ſeeds in this country.

The fifth ſort grows naturally in Crete. The root of this is perennial, and ſends out many trailing branches, which extend one foot and a half in length, garniſhed with oblong heart-ſhaped leaves, which are waved on their edges, and are evergreen. The flowers come out ſingly from the wings of the leaves, which are of a dark purple colour, in ſhape like the others, but the plants never produce ſeeds in England, ſo is propagated by parting of the roots: this is too tender to thrive in the open air in winter; the plants are preſerved in pots, and placed under a common frame in winter, where they ſhould have as much free air as poſſible in mild weather, but ſcreened from hard froſt; in mild winters I have had this plant live abroad in a warm border, but in hard winters it will be deſtroyed; therefore one or two plants ſhould be ſheltered to preſerve the ſpecies.

The ſixth ſort is the Snakeroot, which is greatly uſed in medicine: theſe roots are brought from Virginia and Carolina, where there are two ſpecies of this plant, but this ſort is the beſt for uſe. There are ſome of theſe preſerved in the gardens of thoſe who are curious in collecting rare plants, but as they are ſometimes killed by froſt in winter, ſo they are not very common in the Engliſh gardens. This is propagated by ſeeds, which ſhould be ſown in the autumn, in ſmall pots filled with light ſandy earth, and placed under a common frame in winter, and afterward treated in the ſame manner as hath been directed for the two firſt ſorts, as ſhould the plants alſo; with which management they will produce their flowers, and perfect their ſeeds every year.

The ſeventh ſort grows naturally in North America, and is by ſome called Snakeroot, but is not near ſo ſtrong as the former; the branches of this grow erect, and are perennial, whereas thoſe of the other ſort decay to the root every winter: this riſes about two feet high; the branches are not very woody, but are ſtrong enough to ſupport themſelves; the leaves are oblong and heart-ſhaped; the flowers come out ſingly at the wings of the leaves. This will live abroad in warm borders, with a little protection in hard froſts. It is generally kept in pots, and ſheltered in winter; but thoſe which are planted in the full ground will thrive much better, provided they are ſcreened from hard froſts.

The eighth ſort grows naturally in Jamaica, where it is called Contrayerva; the roots are there uſed as ſuch: this hath long trailing branches, which climb upon the neighbouring plants, and riſe to a conſiderable height; the leaves are placed alternately, and are of the long heart-ſhaped kind; the flowers are produced in ſmall cluſters toward the upper part of the ſtalks, which are of a dark purple colour; the ſeed-veſſels are oblong and ſmooth. This is tender, and in winter ſhould have very little wet, therefore muſt be conſtantly kept in the ſtove, otherwiſe it will not live in England.

The ninth ſort was diſcovered by Dr. Tournefort in the Levant. This hath ſome reſemblance to the ſecond ſort, but the leaves are hairy, and not ſo deeply eared at the bottom; the flowers are alſo much larger. This may be propagated by ſeeds, in the ſame manner as hath been directed for the firſt and ſecond ſorts, and the plants treated ſo, will thrive very well in England.

The tenth ſort ſends out climbing ſtalks, which ſupport themſelves by faſtening to the neighbouring trees, and thereby riſe to a very great height; the leaves are very broad and heart-ſhaped, having ſeveral longitudinal veins; the flowers grow in looſe bunches at the extremity of the branches, each having a long foot-ſtalk: this is tender, ſo muſt be kept in a ſtove, and treated as other exotic plants. It grows naturally about Tolu in New Spain, where it was diſcovered by the late Mr. Robert Millar, who ſent the ſeeds to England.

The eleventh ſort was diſcovered by the ſame gentleman at Campeachy in New Spain, from whence he ſent the ſeeds: this ſort ſeldom climbs above three or four feet high; the leaves are ſhort and heart-ſhaped, in ſome meaſure like thoſe of the firſt; the flowers come out in ſmall cluſters from the wings of the leaves, and are of a dark purple colour.

The twelfth ſort was diſcovered at La Vera Cruz in New Spain, by the late Dr. Houſton, who ſent the ſeeds to Europe: this riſes with an upright ſtalk, to the height of three feet; the leaves are long, narrow, hairy, and grow cloſe to the branches, having ſcarce any foot-ſtalk; the flowers come out ſingly from the wings of the leaves, which are near four inches long, of a dark purple colour, and grow erect; theſe are ſucceeded by ſlender veſſels, about one inch long, which open into ſix cells, filled with flat heart-ſhaped ſeeds. This ſort requires a warm ſtove to preſerve it in this country.

The thirteenth ſort was diſcovered by Mr. Robert Millar, near Carthagena in New Spain, who ſent it to England; this hath ſtrong climbing ſtalks, by which it mounts up to the top of the talleſt trees; the leaves of this are four inches long and two broad, of an oval ſhape, rounded at their ends, and are nearly as thick as thoſe of the common Laurel; the flowers come out in looſe cluſters at the ends of the ſhoots, each ſtanding on a very long foot-ſtalk; the ſeed-veſſels are four inches long, and as much in circumference, having ſix longitudinal ribs, which make ſo many angles, being very prominent; they open into ſix cells, which are filled with heart-ſhaped leaves.

All theſe ſorts, which are natives of the warm parts of America, are too tender to thrive in the open air in this country, therefore require a ſtove to preſerve them. They are propagated by ſeeds, which muſt be procured from the countries where the grow naturally, for they do not produce any here. As the ſeeds are a conſiderable time in their paſſage, they ſhould be brought over in their pods; for many of the ſorts have very thin ſight ſeeds, which are ſoon dried in a hot country, when they are out of their covers, which will prevent their growing. So ſoon as the ſeeds arrive, they ſhould be ſown in ſmall pots filled with light earth; and if this happens in the autumn, or winter, the pots ſhould be plunged into the tan in the bark-ſtove, between ſome of the pots with large plants, which will ſcreen them from the ſun; for as theſe plants delight in ſhade, ſo, by thus placing of the pots, the earth will not dry very faſt, which will be of great advantage to the ſeeds, which ſhould not be too often watered. Here the pots may remain till March, at which time they ſhould be removed, and plunged into a hot-bed, under frames, where, if the ſeeds are good, the plants will appear in May: but if the ſeeds arrive in ſpring or ſummer, they muſt be immediately ſown in ſmall pots, and plunged into a moderate hot-bed, obſerving to ſhade them conſtantly in the heat of the day; but the ſeeds ſown at this ſeaſon ſeldom grow the ſame year; therefore if the plants do not appear, the pots ſhould be plunged in the tan-bed of the ſtove in autumn, and in the ſpring following, treated as before directed, which will bring up the plants. When theſe are ſtrong enough to tranſplant, they ſhould be each put into a ſeparate ſmall pot, and plunged into the tan-bed in the ſtove, and treated as other tender plants from the ſame countries.

ARMENIACA, the Apricot.

The CHARACTERS are,

The empalement of the flower is bell-ſhaped, cut into five blunt ſegments at the top; the flower is compoſed of five large roundiſh petals which ſpread open, whoſe baſe are inſerted in the empalement; in the center is placed a round germen, ſupporting a ſlender ſtyle, crowned by a round ſtigma; this is attended by upward of twenty awl-ſhaped ſtamina, which are crowned by ſhort double ſummits. The germen afterward becomes a roundiſh pulpy fruit, having a longitudinal furrow incloſing a roundiſh nut, which is a little compreſſed on the ſides.

Dr. Linnæus has joined the Armeniaca, Ceraſus, Lauroceraſus, and Padus, to his genus of Prunus, making them only ſo many ſpecies of the ſame genus, and

ranges it in his twelfth claſs of plants, entitled Icoſandria Monogynia; the flowers of this claſs have from twenty to thirty ſtamina faſtened to the empalement, and a ſingle ſtyle.

The joining of ſo many plants under the ſame genus, as Linnæus has done, renders it much more difficult to aſcertain their ſpecific difference, than when they are ranged under different genera; and although moſt of them do agree in thoſe parts from whence the characters according to his ſyſtem are taken, yet if their fruits may be allowed as one of the characteriſtic notes (which ſurely ought not to be totally omitted) there will be reaſon for ſeparating ſome of them, eſpecially when we conſider the boundary which nature has ſet between them; for it is well known that all fruits which are of the ſame genus, may be grafted or budded upon each other; but thoſe of different genera will not take upon each other, nor will any two plants of different genera impregnate each other. Now the Cherry and Plum cannot by any art be made to take when grafted or budded upon ſtocks of the other kind; nor will the Apricot take upon the Cherry, the Laurel, or Padus; but it will grow upon the Plum to which it is nearly allied, therefore theſe may be joined together according to the ſtrict rules of botany: yet in a work of this kind, deſigned for the inſtruction of the practical gardener, were theſe fruits to be included under the ſame appellation, it would rather confound than inſtruct, thoſe who had not applied themſelves to the ſtudy of botany: therefore I ſhall continue this genus under its former title, and ſhall enumerate all the varieties of this fruit which are at preſent cultivated in the Engliſh gardens, ranging them according to the orders of their ripening. For although moſt, if not all thoſe which are by the gardeners called different ſorts, may have been produced by culture, ſo ſhould be deemed as one ſpecies; yet as the differences may be continued for ever, by the method in which they are propagated, ſo it would be unpardonable in a book of gardening to omit them.

The ſpecific title given by Linnæus to the Apricot is, Pruńus floribus ſubſeſſilibus foliis ſubcordatis. Sp. Plant. 474. i. e. *Plum whoſe flowers want foot-ſtalks, and heart-ſhaped leaves.*

The VARIETIES are,

1. The Maſculine Apricot.
2. The Orange Apricot.
3. The Algier Apricot.
4. The Roman Apricot.
5. The Turkey Apricot.
6. The Breda Apricot.
7. The Bruſſels Apricot.

The Maſculine is the firſt ripe of all the Apricots; it is a ſmall roundiſh fruit, of a red colour towards the ſun; as it ripens, the colour fades to a greeniſh yellow on the other ſide. It is chiefly preſerved for being the firſt ripe, and there is a quickneſs in the flavour of the fruit when it is not too ripe, which renders it agreeable; the tree is very apt to be covered with flowers, but as they come out early in the ſpring, they are frequently deſtroyed by the cold, unleſs the trees are covered to protect them.

The Orange is the next ripe Apricot; this fruit is much larger than the former, and as it ripens changes to a deep yellow colour. The fleſh of this is dry and not high flavoured, it is better for tarts than for the table.

The Algier is the next in ſeaſon; this is of an oval ſhape, a little compreſſed on the ſides; it turns to a pale yellow, or ſtraw-colour, when ripe; the fleſh is high flavoured, and very full of juice.

The Roman is the next ripe Apricot; this is a larger fruit than the former, and not compreſſed ſo much on the ſides; the colour is deeper, and the fleſh is not ſo moiſt as the former.

The Turkey Apricot is yet larger than either of the former, and of a globular figure; the fruit turns to a deeper colour than the former; the fleſh is firmer, and drier than thoſe of the two former.

The Breda Apricot (as it is called from its being brought from thence into England) was originally brought from Africa: this is a large roundiſh fruit, changing to a deep yellow when ripe; the fleſh is ſoft, full of juice, and of a deep Orange colour within ſide; the ſtone is rounder and larger than any of the other ſorts: this is the beſt Apricot we have, and when ripened on a ſtandard, is preferable to all other kinds.

The Bruſſels is the lateſt ripe of all the Apricots, for when it is planted againſt a wall, it is generally the beginning of Auguſt before it is ripe, unleſs when it is planted to a full ſouth aſpect; which is what ſhould not be practiſed, becauſe the fruit is never well taſted which grows in a warm expoſure. This fruit is of a middling ſize, rather inclining to an oval figure; red on the ſide next the ſun, with many dark ſpots, and of a greeniſh yellow on the other ſide; the fleſh is firm, and of a high flavour; the fruit often cracks before it is ripe. This is commonly preferred to the former ſort by moſt people, but when the other is planted as a ſtandard, the fruit is fuller of juice, and of a richer flavour than this.

Moſt people train theſe trees up to ſtems of ſix or ſeven feet high, or bud them upon ſtocks of that height; but this is a practice I would not recommend to the public, becauſe the higher the heads of theſe trees are, the more they are expoſed to the cutting winds in the ſpring, which too frequently deſtroy the bloſſoms; and the fruit is alſo more liable to be blown down in ſummer, eſpecially if there ſhould happen to be much wind at the time when the fruit is ripe; which by falling from a great height, will be bruiſed and ſpoiled; therefore I prefer half ſtandards, of about two and a half, or three feet in the ſtem, to thoſe which are much taller; or to plant them as dwarfs againſt an eſpalier, where, if they are ſkilfully managed, they will produce a large quantity of good fruit; and the trees in eſpalier may be more conveniently covered in the ſpring, when the ſeaſon proves bad, whereby there will be a greater certainty of fruit every year.

Theſe fruits are all propagated by budding them on Plum-ſtocks, and will readily take upon almoſt any ſort of Plum, provided the ſtock be free and thriving (except the Bruſſels kind, which is uſually budded on a ſort of ſtock, commonly called the St. Julian, which better ſuits this tree, as being generally planted for ſtandards, than any other ſort of Plum will.) The manner of raiſing the ſtocks, and budding theſe trees, ſhall be treated of under their particular articles, to which I refer the reader, and ſhall proceed to their planting and management.

Theſe trees are all (except the two laſt ſorts) planted againſt walls, and ſhould have an eaſt or weſt aſpect; for if they are planted full ſouth, the great heat cauſes them to be meally before they are eatable.

The borders near theſe walls ſhould be ſix or eight feet wide, at leaſt, and if it were more, the better; but I would never adviſe the making of them ſo deep as is the general cuſtom, for if the earth be two feet deep, or two and a half at moſt, it is enough.

If the ground is a wet cold loam or clay, the borders ſhould be raiſed as much above the level of the ſurface as it will admit, laying ſome ſtones or rubbiſh in the bottom, to prevent the roots from running downwards; but if you plant upon a chalk or gravel, it will be better to raiſe the borders above either to a proper thickneſs, with good loamy earth, than to ſink the borders by removing the chalk or gravel; for although theſe are removed the whole breadth of the border, which we may allow to be eight feet, and this trench filled with good earth, yet the roots of the trees will in a few years extend this length, and then meeting with the chalk or gravel, they will receive a check whereby their leaves will fall off early in the ſeaſon, and the fruit will be ſmall, dry, and ill-flavoured, and the ſhoots of the trees will be weak. But where the borders are raiſed upon either to their full height, the roots will not ſtrike down

into

into the gravel or chalk, but rather extend themſelves near the ſurface, where they will meet with better ſoil: and as the trees are of long duration, and old trees being not only more fruitful than young, but the fruit is alſo better flavoured, therefore the providing for their continuance is abſolutely neceſſary.

The ſoil I would in general adviſe to be uſed for theſe, and all other ſorts of fruit-trees, is freſh untried earth, from a paſture ground, taken about ten inches deep, with the turf, and laid to rot and mellow at leaſt twelve months before it is uſed, mixing a little rotten dung with it; this muſt be often turned, to ſweeten and imbibe the nitrous particles of the air.

When the former ſoil of the border is taken away, this freſh earth ſhould be carried in the place; and if the borders are filled with it two months before the trees are planted, the ground will be better ſettled, and not ſo liable to ſink after the trees are planted: in filling of the borders, the ground ſhould be raiſed four or five inches above the level they are deſigned, to allow for the ſettling.

The borders being thus prepared, make choice of ſuch trees as are but of one year's growth from budding; and if the ſoil is dry, or of a middling temper, October is the beſt ſeaſon for planting, eſpecially having at that time a greater choice of trees from the nurſeries, before they have been picked and drawn over by other people. The manner of preparing theſe trees for planting being the ſame in common with other fruit trees, I ſhall refer the reader to the article of Peaches, where he will find it largely treated of.

At the time of planting no part of the head of the trees ſhould be cut off, unleſs there are any ſtrong foreright ſhoots which will not come to the wall, which may be taken quite away.

The trees being thus prepared, you muſt mark out the diſtances they are to ſtand, which in a good ſtrong ſoil, or againſt a low wall, ſhould be twenty feet or more; but in a moderate one, eighteen feet is a good reaſonable diſtance; then make a hole where each tree is to ſtand, and place its ſtem about four inches from the wall, inclining the head thereto; and after having fixed the tree in the ground, nail the branches to the wall, to prevent their ſhaking, and cover the ſurface of the ground round the root with rotten dung, to keep out the froſt: in this ſtate let it remain till the end of February or the beginning of March, when if the weather is good, you muſt unnail the branches of your trees, ſo as not to diſturb their roots; and, being provided with a ſharp knife, put your foot cloſe to the ſtem of the tree; and having placed your left-hand to the bottom of the tree, to prevent its being diſturbed, with your right-hand cut off the head of the tree, if it has but one ſtem; or where it may have two or more ſhoots, each of them muſt be ſhortened, to about four or five eyes above the bud, ſo that the ſloping ſide may be toward the wall.

In the ſpring, if the weather proves dry, it will be neceſſary to give the trees a gentle refreſhing with water; in the doing of which, if they watered with a roſe to the watering-pot all over their heads, it will greatly help them; and alſo lay ſome turf, in the manner directed for Apples, or ſome other mulch, round their roots, to prevent their drying during the ſummer ſeaſon; and in the ſpring, as new branches are produced, obſerve to nail them to the wall in a horizontal poſition; and ſuch ſhoots as are produced fore-right, muſt be entirely diſplaced. This muſt be repeated as often as is neceſſary, to prevent their hanging from the wall, but by no means ſtop any of the ſhoots in ſummer..

At Michaelmas, when the trees have done growing, their branches ſhould be unnailed, and ſhorten them in proportion to their ſtrength; a vigorous branch may be left eight or nine inches long, but a weak one ſhould not be left above five or ſix. I ſuppoſe many perſons will wonder at this direction, eſpecially having allowed ſuch a diſtance between the trees, as believing, by this management, the wall will never be filled; but my reaſon for it is, that I would have no part of the wall left unfurniſhed with bearing wood; which muſt conſequently be the caſe, if the branches are left to a greater length at firſt; for it ſeldom happens, that more buds than two or three upon each branch ſhoot; and theſe are, for the moſt part, ſuch as are at or near the extreme part of the laſt year's wood; ſo that all the lower part of the ſhoots become naked, nor will they ever after produce ſhoots; and this is the reaſon, we ſee ſo many trees which have their bearing wood ſituated only in the extreme part of the tree.

When you have ſhortened the ſhoots, be ſure to nail them as horizontally as poſſible, for upon this it is that the future good of the tree chiefly depends.

The ſecond ſummer obſerve, as in the firſt, to diſplace all fore-right ſhoots as they are produced, nailing in the other cloſe to the wall horizontally, ſo that the middle of the tree may be kept open; and never ſhorten any of the ſhoots in ſummer, unleſs to furniſh branches to fill vacant places on the wall; and never do this later than the end of April, for reaſons hereafter given in the article of Peaches. At Michaelmas ſhorten theſe ſhoots, as was directed for the firſt year; the ſtrong ones may be left nine or ten inches, and the weak ones ſix or ſeven at moſt.

The following year's management will be nearly the ſame with this, but only obſerve, that Apricots produce their bloſſom buds, not only upon the laſt year's wood, but alſo upon the curſons, or ſpurs, which are produced from the two years wood; a great care ſhould therefore be had in the ſummer management, not to hurt or diſplace theſe: obſerve alſo to ſhorten the branches at the winter pruning, ſo as to furniſh freſh wood in every part of the tree; and be ſure to cut out entirely all luxuriant branches, or diſplace them as ſoon as they are produced; which, if left to grow, would exhauſt the nouriſhment from the bearing branches, which in my opinion, cannot be too ſtrong, provided they are kindly; for the more vigorous the tree is, the more likely it is to reſiſt the injuries of the weather; though we often ſee trees brought to ſo weak a condition, as to be able only faintly to blow their bloſſoms, and then moſt of the bearing branches have died; which has given occaſion to the owner to imagine it was the effect of a blight, when, in reality, it was only for want of right management. And, I am fully perſuaded, half the blights we hear complained of, proceed from nothing elſe but this.

Theſe few rules, well executed, together with a little obſervation and care, will be ſufficient, therefore to pretend to preſcribe particular directions for all the different accidents, or manner of treating fruits, would be impoſſible; but I believe the reader will find what has been ſaid, if duly attended to, will anſwer his deſign; for, without diligent obſervation, there can be no ſuch thing as a ſkilful manager, let him have ever ſo many or good inſtructions laid down to him.

The Bruſſels and Breda Apricots, being, for the moſt part, planted for ſtandards, will require very little pruning or management; only obſerve to take out all dead wood, or ſuch branches as croſs each other; this muſt be done early in autumn, or in the ſpring, after the cold weather is paſt, that the part may not canker where the inciſion is made.

ARMERIUS, Sweet-William. See Dianthus.

ARNICA. Lin. Gen. Plant. 784. Doronicum. Bauh. Pin. 184. Leopardſbane.

The Characters are,

The common empalement is ſcaly, and ſhorter than the rays of the flower. It hath a compound flower, the border or rays being compoſed of many female florets, which ſpread open, cut into three parts at their end; the diſk, or middle, has many hermaphrodite florets, which are tubulous, cut into three unequal ſegments at the brim; theſe have each five ſhort ſtamina, crowned with oblong ſummits. The female florets have alſo five awl-ſhaped ſtamina, but no ſummits; in the hermaphrodite florets the germen is ſituated below the flower, ſupporting a ſlender ſhort ſtyle, crowned by a bifid ſtigma. The germen afterward becomes a ſingle oblong ſeed, crowned with long ſlender down.

This

This genus of plants is ranged in the ſecond ſection of Linnæus's eighteenth claſs, entitled Syngeneſia Polygamia ſuperflua, the flower being compoſed of hermaphrodite and female florets; and the chief diſtinction of this genus is in the hermaphrodite and female flowers being of the ſame ſhape, and the female having ſtamina.

The SPECIES are,

1. ARNICA (*Montana*) foliis ovatis integris, caulinis geminis oppoſitis. Lin. Sp. Plant. 884. *Arnica with entire oval leaves, thoſe on the ſtalks growing oppoſite by pairs.* Doronicum plantaginis folio alterum. C. B. P. 185.
2. ARNICA (*Scorpioides*) foliis alternis ſerratis. Hall. Helvet. 737. *Arnica with ſawed leaves growing alternately.* Doronicum radice dulci. C. B. P. 184.
3. ARNICA (*Crocea*) foliis ovalibus ſerrato denticulatis, ſubtus tomentoſis. Lin. Sp. Plant. 1246. *Arnica with oval indented leaves, whoſe underſides are woolly.* Dens leonis enulæ folio. Pet. Muſ. 393.

The firſt ſort grows naturally upon the Alps, and alſo upon many of the mountains in Germany, and other cold parts of Europe, and is greatly eſteemed by the Germans for its medicinal qualities, where it is preſcribed by this title of Arnica. It is alſo ranged among the medicinal plants in many diſpenſaries, by the title given to it by Caſpar Bauhin.

The roots of this plant, when placed in a proper ſoil and ſituation, greatly increaſe, for they ſend out thick fleſhy roots, which ſpread very far under the ſurface; theſe put out many oval entire leaves, from between which the flower-ſtems ariſe, which grow about a foot and a half high, having two or three pair of leaves growing oppoſite upon each, and the top is terminated by a ſingle yellow flower, compoſed of many florets, like thoſe of Dandelion. Theſe are ſucceeded by oblong ſeeds, which are crowned with down, whereby they are diſperſed to a conſiderable diſtance when ripe. It flowers in April and May, and the ſeeds ripen in September.

This plant delights in a moiſt ſhady ſituation; it may be propagated by parting of the root in autumn, when the ſtalks begin to decay, or by the ſeeds if ſown in autumn, ſoon after they are ripe, for thoſe ſown in the ſpring often fail; but if the ſeeds are permitted to ſcatter, the plants will come up the following ſpring, ſo that when one plant is obtained, it will propagate itſelf faſt enough without other care, but to keep it clean from weeds.

The ſecond ſort grows naturally on the mountains of Bohemia, as alſo in Siberia, from whence I received the ſeeds. The roots of this ſort are much jointed, and divide into many irregular fleſhy offsets, which are variouſly contorted; from whence many ſuperſtitious perſons have been led to imagine, that the roots would expel the poiſon of ſcorpions, and cure the wounds made by the bite of that animal. It is a very hardy plant, and is propagated in the ſame manner as the former.

The third ſort grows naturally at the Cape of Good Hope, from whence the ſeeds have been brought to Europe. This will not live through the winter in the open air in this country, ſo the plants muſt be kept in pots, which ſhould be placed under a common hot-bed frame in winter, to ſcreen it from the froſt, but ſhould enjoy the free air at all times, when the weather is mild. It propagates by roots and ſeeds in plenty. This is titled by Dr. Burman, Gerbera foliis planis dentatis flore purpureo. Plant. Afr. 157.

ARTEDIA. Lin. Gen. Plant. 249. We have no Engliſh name for this genus.

The CHARACTERS are,

It is an umbelliferous plant; the greater umbel is ſpread open, and compoſed of many ſmall ones; the involucrum of the large one is compoſed of ten oblong leaves, which extend the length of the umbel, cut at their tips into three parts. The involucrum of the ſmall umbels have but three narrow leaves, which are longer than the umbel; the rays of the large umbel are difform, thoſe of the ſmall ones in the diſk are male, and the rays are hermaphrodite. They have five petals, which are erect, heart-ſhaped, and turned inward. Theſe have each five ſlender ſtamina, crowned with roundiſh ſummits; thoſe flowers which compoſe the rays, have a ſmall germen at bottom, ſupporting two reflexed ſtyles, crowned by a ſingle ſtigma. The germen afterward becomes a roundiſh compreſſed fruit, with a leafy border, which ſplits into two, and contains two oblong ſeeds, with ſcaly borders.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, from their flowers having five ſtamina and two ſtyles.

We have but one SPECIES of this plant, viz.

1. ARTEDIA (*Squamata*) ſeminibus ſquamatis. Hort. Cliff. 89. *Artedia with ſquamous ſeeds.* Thapſia Orientalis anethi folio ſemine eleganter crenato. Tourn. Cor. 22.

This is a native of the eaſt. Rawvolf found it growing upon Mount Libanus; it is an annual plant, whoſe ſtalks riſe about two feet high, ſending out a few ſide branches, garniſhed with narrow compound leaves reſembling thoſe of Dill; the extremity of the ſtalk is terminated by a large umbel of white flowers, compoſed of five unequal petals, thoſe on the outſide being much larger than the other. Theſe are ſucceeded by roundiſh compreſſed fruit, each having two ſeeds, whoſe borders are ſcaly.

This plant decays as ſoon as the ſeeds are perfected, and many times before they are ripe in England; for unleſs the ſeeds are ſown in autumn, and the plants come up before winter, they rarely produce good ſeeds here. The ſeeds ſhould be ſown on a warm border where the plants are to remain, for they will not bear tranſplanting. All the care they require is to keep them clean from weeds, and thin the plants to ſix or eight inches diſtance. They flower in June, and their ſeeds ripen the end of Auguſt.

ARTEMISIA [Ἀρτεμισία, *Gr.* ſo called, according to ſome, from Artemiſia, wife of Mauſolus, king of Caria, who brought this plant into uſe, and adopted it as hers; whereas, before, it was called Parthenis, the virgin goddeſs being feigned to have given that name to it.] Mugwort.

The CHARACTERS are,

The common empalement is ſcaly and round, as are alſo the ſcales. The flower is compoſed of hermaphrodite and female florets, the border being ranged with the female, which have a ſmall germen at bottom, ſupporting a ſlender ſtyle, crowned by a bifid ſtigma. The hermaphrodite florets compoſe the diſk, or middle; theſe are tubulous, cut into five parts at the brim; in the center is placed the germen, with the like ſtyle and ſtigma as the female, accompanied by five hairy ſtamina, crowned by cylindrical ſummits, which are indented in five parts. The germen afterward becomes a ſingle naked ſeed, ſitting upon a naked placenta.

This genus of plants is ranged in the ſecond ſection of Linnæus's eighteenth claſs, entitled Syngeneſia Polygamia ſuperflua, the flowers of theſe being compoſed of female and hermaphrodite florets, which are both fruitful.

The SPECIES are,

1. ARTEMISIA (*Vulgaris*) foliis pinnatifidis planis inciſis; ſubtus tomentoſis, racemis ſimplicibus floribus ovatis radio quinque floro. Lin. Sp. Plant. 348. *Mugwort with plain cut leaves, ending in many parts, woolly underneath, with ſingle ſpikes of oval flowers, whoſe rays are compoſed of five florets.* Artemiſia vulgaris major. C. B. P. 137.
2. ARTEMISIA (*Integrifolia*) foliis lanceolatis ſubtus tomentoſis integerrimis dentatiſque florum radio ſub quinque floro. Lin. Sp. Plant. 1189. *Mugwort with ſpear-ſhaped entire leaves, indented on their edges, whoſe under ſides are woolly, and the rays of the flower compoſed of five florets.* Artemiſia foliis planis lanceolato-linearibus inferioribus ſæpe ex pinnato-dentatis. Flor. Sib. 2. p. 109.
3. ARTEMISIA (*Cæruleſcens*) foliis caulinis lanceolatis integris; radicalibus multifidis, fioſculis fœmineis ternis. Lin. Sp. 1189. *Mugwort whoſe leaves on the ſtalks are entire,*

entire, thoſe at the root multifid, and three female floſcules compoſe the rays of the flower. Abſinthium maritimum lavendulæ folio. C. B. P. 139. *Lavender-leaved Sea Wormwood.*

4. ARTEMISIA (*Dracunculus*) foliis lanceolatis glabris integerrimis. Hort. Cliff. 403. *Mugwort with ſpear-ſhaped, entire, ſmooth leaves.* Abrotanum lini folio acriore & odorato. Tourn. Inſt. 459. Tarragon.
5. ARTEMISIA (*Minima*) foliis cuneiformibus repandis, caule procumbente, floribus axillaribus ſeſſilibus. Lin. Sp. 1190. *Mugwort with wedge-ſhaped leaves, a trailing ſtalk, and flowers growing at the wings of the ſtalk.*
6. ARTEMISIA (*Abrotanum*) foliis ramoſiſſimis ſetaceis, caule erecto ſuffruticoſo. Hort. Cliff. 403. *Artemiſia with very branching briſtly leaves and a ſhrubby erect ſtalk.* Abrotanum mas anguſtifolium majus. C. B. P. 136. *Southernwood.*
7. ARTEMISIA (*Humilis*) foliis ſetaceis pinnatifidis, caule decumbente ſuffruticoſo. *Mugwort with briſtly wing-pointed leaves, and a low ſhrubby ſtalk.* Abrotanum humile corymbis majoribus aureis. Tourn. Inſt. 459.
8. ARTEMISIA (*Santonicum*) foliis caulinis linearibus pinnato-multifidis, ramis indiviſis, ſpicis ſecundis reflexis. Zin. Goett. 397. *Artemiſia with linear multifid leaves on the ſtalks, undivided branches, and fertile reflexed ſpikes.* Semen ſanctum. Lob. Icon. 756.
9. ARTEMISIA (*Campeſtris*) foliis multifidis linearibus, caulibus procumbentibus virgatis. Hort. Cliff. 403. *Artemiſia with linear multifid leaves, and trailing ſpriggy ſtalks.* Abrotanum campeſtre. C. B. P. 136. *Wild Southernwood.*
10. ARTEMISIA (*Crithmifolia*) foliis compoſitis divaricatis linearibus carnoſis glabris, caule aſcendente paniculato. Lin. Sp. 1186. *Artemiſia with compound, linear, ſmooth, fleſhy leaves, and a panicled aſcending ſtalk.*
11. ARTEMISIA (*Maritima*) foliis multipartitis tomentoſis, racemis cernuis, floſculis fœmineis ternis. Lin. Sp. 1186. *Mugwort with woolly divided leaves, nodding branches, and three female florets.* Abſinthium ſeriphium Belgicum. C. B. P. 139. See WORMWOOD.
12. ARTEMISIA (*Rupeſtris*) foliis pinnatis, caulibus adſcendentibus hirſutis, floribus globoſis cernuis, receptaculo pappoſo. Her. Gotl. 285. *Mugwort with winged leaves, hairy aſcending ſtalks, and globular nodding flowers.* Abſinthium Alpinum incanum. C. B. P. 139.
13. ARTEMISIA (*Pontica*) foliis multipartitis ſubtus tomentoſis, floribus ſubrotundis nutantibus, receptaculo nudo. Hort. Upſal. 257. *Artemiſia with finely divided leaves, woolly on their under ſide, and roundiſh nodding flowers.* Abſinthium Ponticum tenuifolium incanum. C. B. P. 138. *Pontick Wormwood.*
14. ARTEMISIA (*Annua*) foliis triplicato-pinnatis utrinque glabris, floribus ſubgloboſis nutantibus, receptaculo glabro conico. Hort. Upſal. 257. *Artemiſia with triple winged leaves, which are ſmooth on both ſides, globular nodding flowers, having ſmooth conical receptacles.* Abſinthium tanacetifolio odoratiſſimum. Amm. Ruth.
15. ARTEMISIA (*Abſinthium*) foliis compoſitis multifidis, floribus ſubgloboſis pendulis, receptaculo villoſo. Hort. Cliff. 404. *Artemiſia with compound multifid leaves, globular hanging flowers, and hairy receptacles.* Abſinthium vulgare. J. B. *Common Wormwood.*
16. ARTEMISIA (*Inodora*) foliis compoſitis tomentoſis, floribus ſubgloboſis, receptaculo villoſo. *Artemiſia with woolly compound leaves, globular flowers, and hairy receptacles.* Abſinthium inſipidum Abſinthio vulgari ſimile. C. B. P. *Inſipid Wormwood.*
17. ARTEMISIA (*Arboreſcens*) foliis compoſitis multifidis linearibus, floribus ſubgloboſis, caule fruteſcente. Lin. Sp. 1188. *Artemiſia with compound linear leaves, globular flowers, and a ſhrubby ſtalk.* Abſinthium arboreſcens. Lob. Icon. 753. *Tree Wormwood.*
18. ARTEMISIA (*Æthiopica*) foliis linearibus confertis minimis diviſis, caule fruticoſo tomentoſo. Lin. Sp. 1184. *Mugwort with linear leaves in bunches, and a woolly ſhrubby ſtalk.* Abſinthium Africanum arboreſcens, folio vermiculato incano. Tourn. Inſt. 458.
19. ARTEMISIA (*Glacialis*) foliis palmatis multifidis ſericeis, caulibus adſcendentibus, floribus glomeratis ſub faſtigiatis. Lin. Sp. 1187. *Mugwort with ſilky multifid leaves, aſcending ſtalks, and glomerated flowers.* Abſinthium Alpinum candidum humile. C. B. P. 139.
20. ARTEMISIA (*Tanacetifolia*) foliis bipinnatis ſubtus tomentoſis nitidis, pinnis tranſverſis, racemis ſimplicibus. Lin. Sp. 1188. *Artemiſia with double-winged leaves, woolly on their under ſide, and a ſimple racemis of flowers.*

The firſt ſort grows naturally on banks, and by the ſide of foot-paths, in moſt parts of England, ſo is rarely admitted into gardens, where it would ſoon become a troubleſome weed; for the roots creep far under the ſurface of the ground, ſo that unleſs they are ſtopped, they will ſoon ſpread over a large ſpace of ground; but as this plant is uſed in medicine, I have here mentioned it. This flowers in June, at which time the herb is in perfection for uſe.

The Moxa, ſo famous in the eaſtern countries for curing the gout by burning of the part affected, is the lanugo, or down, which is on the under part of the leaves, of a ſort of Mugwort, which is ſuppoſed to be different from our common ſort, but the dried ſamples which I have ſeen brought to England for that, appear to differ in nothing but the ſize of the plant, that being much leſs; and I ſuppoſe the ſoft down of the common ſort, or of any other plant, will anſwer the purpoſe full as well.

The ſecond ſort grows naturally in Siberia; this riſes up with ſingle ſtalks about two feet high, which are garniſhed with plain, narrow, ſpear-ſhaped leaves, cut into acute ſegments on their edges, ſomewhat like thoſe of Buckſhorn Plantain; the flowers come out from the wings of the leaves in ſmall looſe ſpikes, and near the top they are often ſingle; theſe are larger than thoſe of the common ſort, and are of a pale yellow colour.

This ſort is as hardy as the common, and multiplies as faſt, ſo is only preſerved in botanic gardens for the ſake of variety.

The third ſort grows naturally near the ſea, in Italy, Spain, and France, but is hardy enough to live in the open air in England, provided it is planted in a dry ſoil: it grows too feet high, having many ligneous branches, which are terminated by ſpikes of flowers, which have little beauty, therefore the plants are preſerved in gardens for the ſake of variety.

The fourth ſort is the common Tarragon, which is frequently uſed in ſallads, eſpecially by the French: this is a very hardy plant, which propagates greatly by its creeping roots, or may be multiplied faſt by planting the young ſhoots the beginning of May, in the ſame manner as is practiſed for Mint, and if they are duly ſupplied with water in dry weather, will ſoon ſpread and meet.

The fifth ſort grows naturally in China, but is hardy enough to thrive in the open air here. It is an annual plant, which ſeldom comes up the firſt year, if the ſeeds are ſown in the ſpring; therefore it is much better to let the ſeeds ſcatter in the autumn, becauſe theſe will more ſurely grow, than thoſe ſown by hand.

The ſixth ſort is the common Southernwood, which is kept in gardens for the agreeable ſcent of its leaves; it is a low under ſhrub, ſeldom riſing more than three or four feet high, ſending out lateral ſhrubby branches growing erect, garniſhed with five briſtly leaves, having an agreeable ſcent when bruiſed: the flowers are produced in ſpikes from the extremity of the branches, but unleſs the autumn proves warm and dry, the flowers rarely open in England.

This is propagated by ſlips and cuttings, planted in a ſhady border, about the beginning of April, obſerving to water them duly in dry weather; in this border they may remain till the following autumn, when they ſhould be tranſplanted, either into pots or thoſe parts of the garden where they are deſigned to remain.

The ſeventh ſort is a very low under ſhrub, the branches bend near the ground, ſo never riſe more

than two feet high, unleſs when they flower; for the ſpikes are generally more than a foot long; the flowers are yellow, and are ranged in ſpikes which appear in autumn. This is propagated either by ſlips or cuttings in the ſame manner as the former, and is equally hardy.

The eighth ſort produces the Semen Santonicum, which is much uſed for worms in children. It grows naturally in Perſia, from whence the ſeeds are brought to Europe; this hath the appearance of our Wild Mugwort; the branches are ſlender, erect, and garniſhed with linear winged leaves, and terminated by recurved ſlender ſpikes of flowers, which have naked receptacles. This may be propagated by ſlips or cuttings in the like manner as the former; but the plants ſhould be planted in a dry ſoil and ſheltered ſituation, where they will endure the cold of our ordinary winters pretty well, but it will be proper to have a plant or two in pots, which may be ſheltered in winter under a common hot-bed frame to preſerve the ſpecies.

The ninth ſort is our common Wild Southernwood, which grows naturally in ſome parts of Norfolk, ſo is rarely admitted into gardens.

The tenth ſort grows naturally in Portugal; this is a low under ſhrub, ſeldom riſing more than two feet high, and has much of the aſpect of our wild ſort, ſo is rarely kept in gardens in this country.

The eleventh ſort is the common Sea Wormwood, grows naturally on the ſea coaſts in moſt parts of England, where there are ſeveral varieties (if not diſtinct ſpecies) to be found. Theſe are low under ſhrubs, moſt of them creep at their root, whereby they multiply greatly in their natural ſituation, but when tranſplanted into a garden, ſeldom thrive ſo well; however, theſe varieties are now commonly ſubſtituted for the true Roman Wormwood in the London ſhops.

The twelfth ſort grows naturally on the Alps; this is alſo a low under ſhrub, ſeldom riſing more than a foot high, ſending out ſeveral ſlender branches, garniſhed with very white winged leaves, for which the plants are ſometimes admitted into gardens. It is very hardy, and may be eaſily propagated by cuttings in the ſpring.

The thirteenth ſort is the true Roman Wormwood, though at this time never uſed in any of the ſhops; yet by ſkilful perſons is greatly preferred to the Sea Wormwood, being leſs nauſeous and a much pleaſanter bitter, and may be had in as great plenty, provided it was cultivated by thoſe who ſupply the markets with medicinal herbs. This is a low herbaceous plant, whoſe ſtalks die to the root in autumn, and new ones ariſe in the ſpring; theſe are garniſhed with finely divided leaves, whoſe underſide are woolly; the upper part of the ſtalks are furniſhed with globular flowers which nod on one ſide, having naked receptacles. Theſe appear in Auguſt, but are rarely ſucceeded by ſeeds in England.

This ſort is eaſily propagated by its creeping roots, which may be parted in the autumn, and planted two or three feet aſunder, that they may have room to ſpread; the beſt time for this is in the middle of October; it will grow in any ſoil which is not too wet.

The fourteenth ſort grows naturally in Siberia; it is an annual plant which grows two feet high, garniſhed with ſmooth winged leaves, which have an agreeable ſcent; the flowers are globular and nod on one ſide. If the ſeeds of this are permitted to ſcatter in the autumn, the plants will come up better than if ſown with care.

The fifteenth ſort is the common Wormwood which grows naturally in lanes and uncultivated places in many parts of England, ſo is not often cultivated in gardens. This is eaſily propagated by ſeeds, which ſhould be ſown in the autumn ſoon after they are ripe; or if they are permitted to ſcatter, the plants will come up without farther care.

The ſixteenth ſort has been ſuppoſed to be a variety

of the common Wormwood: indeed the appearance of the plants are nearly alike, but the ſegments of the leaves of this are broader and whiter than thoſe of the common, and the whole plant is inſipid, and continues ſo from ſeed.

The ſeventeenth ſort is commonly known by the title of Tree Wormword; this grows naturally near the ſea in Italy and the Levant. This riſes with a woody ſtalk ſix or ſeven feet high, ſending out many ligneous branches, garniſhed with leaves ſomewhat like thoſe of the common Wormwood, but more finely divided, and much whiter. The branches are terminated by ſpikes of globular flowers in the autumn, which are ſeldom ſucceeded by ſeeds here. This plant is eaſily propagated by cuttings, which, if planted in a ſhady border during the ſummer ſeaſon, and duly watered, take root freely. In autumn ſome of the young plants ſhould be potted, that they may be ſheltered in winter; the other may be planted in a warm border, where they will live, provided the winter proves favourable.

The eighteenth ſort is a low ſhrubby plant; the ſtalk is woolly, ſending out a few ſhrubby branches, garniſhed with linear leaves growing in cluſters; the flowers grow in a roundiſh bunch, and are ſhaped like thoſe of Wormwood. This grows naturally in Æthiopia. It is propagated by planting the cuttings any time in ſummer, and the plants muſt be ſheltered from hard froſts in winter.

The nineteenth ſort grows naturally on the Alps; this is a low plant, ſeldom riſing more than a foot and a half high; the ſtalks are cloſely garniſhed with very white leaves ſhaped like a hand; the flowers are globular, and produced in cluſters at the extremity of the ſtalk; theſe are rarely ſucceeded by ſeeds in England. This plant may be propagated by planting the ſide ſhoots in a ſhady border during any of the ſummer months, which, if duly watered, will put out roots, and in autumn they may be tranſplanted where they are to remain.

The twentieth ſort grows naturally at Piedmont; it is an herbaceous plant, whoſe ſtalks die to the root in winter, and freſh ſhoots ariſe in the ſpring, which are garniſhed with winged leaves, woolly on their under ſide; the flowers are produced on ſingle ſpikes, which are rarely ſucceeded by ſeeds in England. It may be eaſily propagated by parting the roots in the autumn.

ARTICHOKE is called by the Latins Cinara.

As this plant is much better known by its Engliſh title than the Latin, I ſhall treat of it under this head, and refer for its character to the Latin title of Cinara, under which the other ſpecies will be exhibited.

We have two ſorts of Artichokes which are cultivated in the Engliſh gardens, which we ſhall diſtinguiſh here only by the names they are generally known among the gardeners, and reſerve their farther diſtinctions to their Latin titles.

The beſt ſort is what the gardeners call the Globe Artichoke. This hath large heads with broad brown ſcales, which turn inward; the fleſhy part at the bottom of the ſcales is very thick, therefore is much preferred to the other, which is called the French Artichoke. The ſtalks of this ſort generally grow taller, and the heads are ſmaller, and more conical than thoſe of the other ſort. The ſcales are narrower, of a greener colour, and turn outward. The fleſhy part which is eaten is not near ſo thick, and hath a diſagreeable perfumed taſte; this was almoſt totally rooted out of the Engliſh gardens before the hard froſt in $17\frac{39}{40}$, when the greateſt part of the roots of the other ſort were deſtroyed, ſo many perſons were ſupplied the following ſpring with plants from Guernſey, where they cultivate only the latter ſort; but ſince the other has been increaſed again, this green ſort has been in moſt gardens rooted out, to make way for the Globe Artichoke.

The manner of propagating this plant is from ſlips, taken from the old roots, in February or March, which, if planted in a good ſoil, will produce large

fair fruit the autumn following; but as this is a plant which few gardeners, that have not been inſtructed in the kitchen-gardens near London, underſtand to manage well, I ſhall be the more particular in my directions about it.

At the latter end of February, or in March, according to the earlineſs of the ſeaſon, or forwardneſs of the old Artichoke roots, will be the proper time for dreſſing them, which muſt be thus performed: with your ſpade remove all the earth from about your ſtock, down below the part from whence the young ſhoots are produced, clearing the earth from between the ſhoots with the hands, ſo as to be able to judge of the goodneſs of each, with their proper poſition upon the ſtock; then make choice of two of the cleareſt, ſtraiteſt, and moſt promiſing plants that are produced from the under part of the ſtock, which are much preferable to the ſtrong thick plants which generally grow upon the crown of the roots; for theſe have hard woody ſtems, ſo never produce good fruit, but are generally what the market people call rogues, which have very little bottom; the ſcales of their heads are irregularly placed; in ſlipping off the plants you muſt be careful not to injure thoſe which are to remain for a crop; then with your thumb force off all the other plants and buds alſo cloſe to the head of the ſtock, from whence they are produced, being very careful not to leave any of the buds, which will ſoon produce plants ſo as to hurt thoſe which are left: then with your ſpade draw the earth about the two plants which are left, and with your hands cloſe it faſt to each of them, ſeparating them as far aſunder as they can conveniently be placed without breaking them, obſerving to crop off the tops of the leaves which hang down with your hands; your ground being levelled between the ſtocks, you may ſow thereon a ſmall crop of Spinach, which will be taken off before the Artichokes will cover the ground, and be ſure to keep them clear from weeds; and toward the latter end of April, or the beginning of May, when your old plants begin to ſhew their fruit, you muſt carefully look over your ſtocks, and draw up all young plants from them, which may have been produced ſince their dreſſing, and cut off all ſuckers which are produced from the ſtems of the Artichoke, leaving only the principal head, by which means your fruit will be the larger; when your Artichokes are fit to gather, you muſt break or cut them down cloſe to the ſurface of the ground, that your ſtocks may make ſtrong freſh ſhoots before the end of October: the ſeaſon for earthing, or, as the gardeners term it, landing them up, is the middle or latter end of November, which is thus done:

Cut off all the young ſhoots quite cloſe to the ſurface of the ground; then dig between every ſtock, raiſing all the earth between each row of ſtocks into a ridge, as is done in the common method of trenching ground, ſo as that the row of Artichokes may be exactly in the middle of each ridge, this will be ſufficient to guard them againſt froſt; and I would here recommend it to the public, as infinitely preferable to long dung, which is by the unſkilful often uſed, and is the occaſion of their fruit being ſmall, and almoſt without any bottoms to them; for there is not any thing ſo hurtful to theſe, as new dung being either buried near, or laid about them.

Since we have experienced, that, in very ſevere froſts theſe roots are ſometimes deſtroyed, therefore it is proper to give ſome directions to prevent it; though this rarely happens in dry ground, in which we have but few inſtances of their being killed, except in the hard froſts of 1683, and $17\frac{39}{40}$. In theſe two winters moſt of the Artichokes were deſtroyed in England; in the laſt of theſe winters, it happened from the little care which was taken of them, there having been no froſt for ſo many years before, which had injured them, that few people uſed any care to preſerve them; but ſince that hard froſt, many people have run into the other extreme of covering all their roots of Artichokes with long dung every winter, which is a very bad method, becauſe the dung lying near the roots, is very apt to rot the beſt plants; therefore I would adviſe the earthing (or as it is called by the gardeners, landing) the Artichokes to be deferred till the latter end of November, or the beginning of December, provided the ſeaſon continues mild; and towards Chriſtmas, if there is any danger of ſevere froſts, to lay a quantity of long dung, Peaſe-haulm, tanners bark, or any other light covering over the ridges of earth, which will keep out the froſt; and this being at a diſtance from the roots, will not injure them; but this covering ſhould be carefully taken off the beginning of February, or ſooner, provided the ſeaſon is mild, or at leaſt ſo ſoon as the weather is ſo, otherwiſe the plants will be injured by its lying too long upon them.

It will alſo be a good method, whenever any roots of Artichokes are dug up in autumn, either to bury them deep in the ground in a pit till ſpring, or lay them in a heap, ſo as that they may be eaſily covered in hard froſts; and theſe may be a ſupply, if thoſe in the ground are deſtroyed.

When you have thus earthed them up, you have nothing more to do till February or March, by which time they will have grown through the ridge of the earth; and, when the weather is proper, muſt be dreſſed as was before directed.

When you have a mind to make a new plantation, after having digged and buried ſome very rotten dung in the ground you have allotted for that purpoſe, make choice of ſuch of your plants as were taken from your old ſtocks, which are clear, ſound, and not woody, having ſome fibres to their bottom; then with your knife cut off that knobbed woody part, which joined them to the ſtock; and if that cuts criſp and tender, it is a ſign of its goodneſs, but if tough and ſtringy, throw it away as good for nothing; then cut off the large outſide leaves pretty low, that the middle or heart leaves, may be above them. Your plants being thus prepared (if the weather is very dry, or the plants have been any time taken from the ſtocks, it will be convenient to ſet them upright in a tub of water for three or four hours before they are planted, which will greatly refreſh them;) you muſt then proceed to planting, which muſt be done by ranging a line acroſs the ground, in order to their being placed exactly in a row; and, with a meaſure ſtick, plant them at two feet diſtance from each other in the rows, and if deſigned for a full crop, five feet diſtance row from row; your plants muſt be ſet about four inches deep, and the earth cloſed very faſt to their roots, obſerving, if the ſeaſon proves dry, to keep them watered two or three times a week, until they are growing, after which they ſeldom require any.

N. B. You may ſow a thin crop of Spinach upon the ground before you plant your plants, obſerving to clear it from about them after it is come up.

Theſe plants, in a kindly ſeaſon, or a moiſt ſoil, will produce the largeſt and beſt Artichokes ſome time in Auguſt and September, after all thoſe from the old ſtocks are paſt; ſo that if you intend to continue your Artichokes through the whole ſeaſon, you muſt make a new plantation every year, otherwiſe you cannot poſſibly have fruit longer than two or three months.

If any of the plants which are planted in the ſpring ſhould not fruit in autumn, you may, at the ſeaſon of earthing up your roots, tie up the leaves with a ſmall Willow twig, &c. and lay the earth up cloſe to it, ſo that the top of the plant may be above ground; and when the froſt comes on, if you will cover the top with a little ſtraw, or Peaſe-haulm, to prevent their being killed by froſt, theſe plants will produce fruit in winter, or early in the ſpring.

But in thoſe plantations where you intend to plant other things between your Artichokes, you muſt allow nine or ten feet between the rows, as is often practiſed by the kitchen-gardeners near London, who ſow the ground between with Radiſhes or Spinach, and

and plant two rows of Cauliflowers, at four feet diſtance row from row, and two feet and a half aſunder in the rows, ſo that there are always five feet allowed for the Artichokes to grow; and in May, when the Radiſhes or Spinach are taken off, they ſow a row of Cucumbers for pickling, exactly between the two rows of Cauliflowers, at three feet diſtance from each other; and between the rows of Cauliflowers and the Artichokes, plant a row of Cabbages or Savoys for winter uſe, which, when the Cauliflowers are drawn off, and the Artichokes gathered, will have full liberty to grow, and by this means the ground is fully employed through the whole ſeaſon. This has long been the practice of the kitchen-gardeners near London, who pay large rents for their land, ſo are obliged to get as many crops in a year from it as poſſible.

In thoſe which are planted at five feet diſtance row from row, you may plant in every other row a line of Cabbages or Savoys for winter uſe, which will be gone by the time of landing them up; in doing of which you muſt lay the whole five feet of earth into one ridge, except the ground be extreme ſtiff, or the plants young, in both which caſes you may lay only three feet and a half of the ground in the ridge over the roots, and the remainder may be laid in a ſmall ridge between; the ſame compaſs of ground muſt alſo be allowed where they are planted at a wider diſtance.

And if in the ſpring you find your ſtocks ſhoot very weak, which may have been occaſioned either by hard froſt, or too much wet, you muſt then uncover them, and with your ſpade looſen and break the earth about them, raiſing a ſmall hill about each ſtock, levelling the reſt between the rows, which will greatly help them, and in three weeks, or a month's time after, they are commonly fit to ſlip.

Thoſe Artichokes which are planted in a moiſt rich ſoil, will always produce the largeſt and beſt fruit; ſo that where ſuch a ſoil can be obtained, it will be proper to make a freſh plantation every ſpring, to ſucceed the old ſtocks, and ſupply the table in autumn. But the roots will not live through the winter in a moiſt ſoil, ſo that your ſtocks which you intend ſhould remain to ſupply the table early, and to furniſh plants, ſhould be in a drier ſoil. You ſhould always obſerve to plant theſe in an open ſituation, and not under the drip of trees, where they will draw up very tall, and produce ſmall inſignificant fruit.

ARTICHOKES of Jeruſalem. See HELIANTHUS.

ARTICULATION, is the connection of parts that conſiſt of joints, or knees, ſuch as are the ſiliquæ [the huſks] of many plants; as of the Ornithopodium, Coronilla, which are joined together by a ſoluble knot; whence thoſe parts are called articuloſæ, and are ſaid to be connected articulatim, or geniculatim; and ſuch plants are called Articuloſæ, whoſe roots are jointed, although the ſtalks have no joints; ſo the root of Polygonatum is ſaid to be articuloſe, or geniculated.

ARUM, Wake Robin, or Cuckow Pint.

The CHARACTERS are,

The flower hath a large oblong ſpatha, which is cloſed at the bottom, compreſſed in the middle, and coloured within; the ſpadix is ſingle, ſhaped like a club at the top, and ſhorter than the ſpatha upon which the germen are ſituated. It hath no petals nor ſtamina, but many four-cornered ſummits, ſitting cloſe to the germen, with a double row of hairs between them, which adhere to the ſpadix. There are many oval germen which ſurround the upper part of the ſpadix, having no ſtyles, but have bearded ſtigma: the germen afterward become globular berries, with one cell, having round ſeeds.

This genus of plants is ranged in the ſeventh ſection of Linnæus's twentieth claſs, entitled Gynandria Polyandria, theſe plants having male and female flowers joined, but have no ſtamina nor ſtyle, but many ſummits.

This plant is called Wake Robin, from the ſharp acrid taſte, which, if eaten, will occaſion a violent pain in every part of the mouth and throat, attended commonly with a great defluxion of water.

The SPECIES are,

1. ARUM (*Maculatum*) acaule foliis haſtatis integerrimis ſpadice clavato. Hort. Upſal. 434. *Arum without ſtalk, ſpear-ſhaped entire leaves, and a club-ſhaped ſpadix.* Arum vulgare maculatum & non maculatum. C. B. P. 195. *The common Arum.*
2. ARUM (*Italicum*) foliis haſtatis acutis petiolis longiſſimis ſpathâ maximâ erectâ. *Arum without ſtalk, pointed ſpear-ſhaped leaves, with long foot-ſtalks, and a large upright ſpatha.* Arum venis albis Italicum maximum. H. R. Par.
3. ARUM (*Proboſcidium*) acaule foliis haſtatis ſpathâ declinatâ filiformi-ſubulatâ. Lin. Sp. Plant. 966. *Arum without ſtalk, ſpear-ſhaped leaves, and a declining awl-ſhaped ſpatha.* Ariſarum flore in tenuem caudam abeunte. Tourn. Inſt. 161. *Friers Cowl.*
4. ARUM (*Ariſarum*) acaule foliis cordato-oblongis ſpathâ bifidâ ſpadice incurvo. Hort. Cliff. 435. *Arum without ſtalk, oblong heart-ſhaped leaves, a bifid ſpatha, and an incurved ſpadix.* Ariſarum latifolium majus. C. B. P. 196. *Broad-leaved Friers Cowl.*
5. ARUM (*Tenuifolium*) acaule foliis lanceolatis ſpadice ſetaceo declinato. Hort. Cliff. 345. *Arum without ſtalk, ſpear-ſhaped leaves, and a briſtly declining ſpadix.* Ariſarum anguſtifolium Dioſcoridis forte. Boerh. Ind. alt. 2. p. 73.
6. ARUM (*Virginicum*) acaule foliis haſtato-cordatis acutis angulis obtuſis. Hort. Cliff. 434. *Arum without ſtalk, pointed, ſpear, heart-ſhaped leaves, with obtuſe angles.*
7. ARUM (*Triphyllum*) acaule foliis ternatis floribus monoicis. Flor. Virg. 113. *Three-leaved Arum without ſtalk.* Arum minus triphyllum ariſarum pene viridi Virginianum. Mor. Hiſt. 3. p. 547.
8. ARUM (*Dracunculus*) foliis pedatis, foliolis petiolatis integerrimis æquantibus ſpatham ſpadice longiorem. Lin. Sp. Prod. Leyd. 7. *Arum with foot-ſhaped leaves, compoſed of ſpear-ſhaped, entire, equal lobes, and the ſpatha much longer than the ſpadix.* Dracunculus polyphyllus. C. B. P. 195. *Common Dragon.*
9. ARUM (*Dracontium*) foliis pedatis, foliolis lanceolatis integerrimis ſuperantibus ſpatham ſpadice breviorem. Prod. Leyd. 7. *Arum with foot-ſhaped leaves, the upper being compoſed of ſpear-ſhaped entire lobes, and the ſpatha ſhorter than the ſpadix.* Arum polyphyllum minus & humilius. H. L. 60.
10. ARUM (*Trilobatum*) acaule foliis ſagittato trilobis flore ſeſſile. Flor. Zeyl. 326. *Trifoliate Arum without ſtalks, and a flower growing cloſe to the root.* Arum humile Zeylanicum latifolium piſtillo coccineo. Hort. Amſt. 1. p. 97.
11. ARUM (*Colocaſia*) acaule foliis peltatis ovatis repandis baſi ſemibifidis. Hort. Cliff. 434. *Arum without ſtalk, target-ſhaped oval leaves, waved and ſinuated at their borders, and divided into two parts at their baſe.* Arum maximum Ægyptiacum quod vulgò Colocaſia. *Called Colocaſia.*
12. ARUM (*Betæ folia*) acaule foliis cordatis nervoſis floribus ſeſſilibus. *Arum without ſtalk, nervous heart-ſhaped leaves, and flowers without petals.* Arum Americanum betæ folio. Cateſb. Hiſt. Car. 1. 71. *Called Scunk Weed.*
13. ARUM (*Divaricatum*) acaule foliis cordatis angulatis divaricatis. Lin. Sp. Plant. 966. *Arum without ſtalk, and heart-ſhaped angular leaves.* Arum acaule foliis ſubhaſtatis. Flor. Zeyl. 325.
14. ARUM (*Peregrinum*) acaule foliis cordatis obtuſis mucronatis angulus rotundatis. Hort. Cliff. 435. *Arum without ſtalk, blunt heart-ſhaped leaves, which are pointed, and the angles rounded, called Edder in America.*
15. ARUM (*Eſculentem*) acaule foliis peltatis ovatis integerrimis baſi ſemibifidis. Hort. Cliff. 453. *Arum without ſtalk, oval target-ſhaped leaves, whoſe baſe are divided in two parts.* Arum minus nymphææ folio eſculentum. Sloan. Cat. Jam. 62.

16. ARUM

16. ARUM (*Sagittæ folium*) acaule foliis ſagittatis triangulis angulis divaricatis acutis. Hort. Cliff. 345. *Arum without ſtalk, lance-ſhaped leaves which are triangular, acute-pointed, and ribbed.* Arum maximum Ægyptiacum quod vulgò Colocaſia cauliculis nigricantibus Zeylanica. H. L. B.
17. ARUM (*Arboreſcens*) cauleſcens rectum, foliis ſagittatis. Lin. Sp. 1371. *Arum with an erect ſtalk, and arrow-ſhaped leaves, commonly called Dumb Cane.*
18. ARUM (*Auritum*) cauleſcens radicans, foliis ternatis, lateralibus unilobatis. Lin. Sp. 1371. *Arum whoſe ſtalks ſend out roots, and trifoliate leaves.* Arum hederaceum triphyllum & auritum. Plum. Amer. 41. tab. 58.

The firſt ſort grows naturally in woods and on ſhady banks in moſt parts of England, ſo is ſeldom admitted into gardens; but being a medicinal plant, it is here inſerted to introduce the other ſpecies. There are two varieties of this, one with plain leaves, and the other hath leaves full of black ſpots, but theſe are only accidental varieties which ariſe from the ſame ſeeds. The roots of this are ordered by the College of Phyſicians to be uſed in a powder which bears the title of the plant; but theſe are generally gathered in the ſpring, when the leaves are in full vigour, ſo that the roots ſhrink and ſoon loſe their pungent quality; but thoſe which are taken up in Auguſt, when their leaves decay, will continue good a whole year, and retain their pungency the ſame as when firſt taken up. The not obſerving this, has brought the medicine into diſrepute. It flowers in April, and the ſeeds ripen in July.

The ſecond ſort grows naturally in Italy, Spain, and Portugal, from whence I have received the ſeeds. The leaves of this ſort riſe a foot and a half high, are very large, running out to a point; theſe are finely veined with white, interſperſed with black ſpots, which, together with the fine ſhining green of their ſurface, make a pretty variety. The flowers grow near a foot high, and have very long upright ſpathas, which are of a pale green, inclining to white; theſe appear the end of April, or beginning of May, and the ſeeds are ripe in Auguſt; this propagates very faſt by offsets from the root, and will thrive in any ſoil or ſituation. The beſt time to tranſplant them is ſoon after the ſeeds are ripe, for by the end of October they will be putting out new fibres.

The third, fourth, and fifth ſorts have been generally ſeparated from this genus, and were diſtinguiſhed by the title of Ariſarum, or Friar's Cowl, from the reſemblance the flower has in ſhape to the hoods or cowls worn by the people of that order; the leaves of theſe have ſhort foot-ſtalks, the flowers growing cloſe to the ground; they flower in April, but ſeldom produce ſeeds in England; however they multiply faſt by offsets, and ſhould have a ſhady ſituation. The time for tranſplanting the roots is the ſame as for the former. They are preſerved in ſome gardens for the ſake of variety, but have little beauty to recommend them.

The ſixth and ſeventh ſorts grow naturally in Virginia and Carolina, from whence I have received their roots; their leaves ariſe immediately from the roots, having ſcarce any foot-ſtalks; the flowers come up between their leaves, which have ſhort foot-ſtalks; they appear in May, but have little beauty, ſo the plants are only kept in botanic gardens for the ſake of variety. They will live in the open air, if they are planted in a ſheltered ſituation, or if the ſurface of the ground is covered with tan to keep out the froſt in winter, and will thrive better in the full ground than in pots. They are propagated by offsets.

The eighth ſort is the common Dragon, which is uſed in medicine, and has been generally ranged in a ſeparate genus from this under the title of Dracunculus, in which genus Tournefort has ranged all thoſe ſpecies which have compound leaves, and thoſe with ſingle leaves he has placed under Arum.

This ſort is uſed in medicine, ſo is preſerved in gardens to ſupply the markets: it grows naturally in moſt of the ſouthern parts of Europe. This plant hath a large, tuberous, fleſhy root, which, in the ſpring puts up a ſtrait ſtalk about three feet high, which is ſpotted like the belly of a ſnake; at the top it ſpreads out into leaves, which are cut into ſeveral narrow ſegments almoſt to the bottom, which ſpread open like a hand; at the top of the ſtalk the flower is produced, which is in ſhape like the common Arum, having a very long ſpatha of a dark purple colour, ſtanding erect, with a large piſtil of the ſame colour, ſo that when it is in flower, it makes no unpleaſing appearance; but the flower hath ſo ſtrong a ſcent of carrion, that few perſons can endure it; for which reaſon it hath been baniſhed moſt gardens, but was it not for this, a few of the plants might merit a place in gardens, for the oddneſs of the flower. It is very hardy, ſo will grow in any ſoil or ſituation, and propagates very faſt by offsets from the root. The time to tranſplant it is in autumn, when their leaves decay. It flowers in June or July, and their ſtalks decay in September.

The ninth ſort grows naturally in moiſt places in Virginia and New England, but is very difficult to preſerve long in a garden. I received ſome roots of this from New England a few years ago, which continued two years; but the ſoil being dry, they decayed in ſummer: theſe ſhould have a moiſt ſhady ſituation, otherwiſe they will not thrive. The leaves of this ſort are divided like thoſe of the former, but are ſmaller, and rarely grow more than nine inches high; the flowers are like thoſe of the common Arum, but the piſtil is longer than the ſpatha. It flowers in June, and the ſtalks decay in autumn.

The tenth ſort grows naturally in Ceylon, and ſome other parts of India, ſo is very impatient of cold: it is a plant of humble growth: the leaves come up from the root, having foot-ſtalks about four inches long; theſe are divided into three lobes, which terminate in points; the flower riſes immediately from the root, ſtanding on a very ſhort foot-ſtalk; the ſpatha is long, erect, and of a fine ſcarlet within, as is alſo the piſtil. This uſually appears in May, and the leaves decay in Auguſt, but new ones ſoon after riſe from the root. This plant muſt be placed in the tan-bed of the bark-ſtove, otherwiſe it will not thrive in England. It is propagated by offsets from the root, which come out in plenty when the plants are in health.

The eleventh, thirteenth, fourteenth, fifteenth, and ſixteenth ſorts, have mild roots, which are eaten by the inhabitants of all the hot countries, where they grow naturally, and ſome of the ſorts are cultivated by the inhabitants of the ſugar colonies, as eſculent plants, their roots being conſtantly eaten, as alſo are the leaves of ſome of the ſorts, particularly the fifteenth, which they call Indian Kale: the leaves of this are boiled, and ſupply the want of other greens. As there is a conſtant ſucceſſion of theſe all the year, a ſmall ſpot of ground, planted with theſe roots, will be ſufficient to ſupply a large family. It is eſteemed a wholſome green, and in thoſe countries where many of the common European vegetables are with difficulty procured, this proves a good ſuccedanum; but they ſeem to make little diſtinction of the ſpecies, for I have received the roots of three ſorts, by the common title of Edder; but I ſuppoſe the fourteenth ſort is the moſt commonly cultivated there for their roots. The ſixteenth ſort has not been many years introduced among them, for it came originally from the Spaniſh Weſt-Indies, where it grows in great plenty. Both theſe have larger roots than the fifteenth, for which reaſon they are preferred to it.

All theſe ſorts are preſerved in the gardens of thoſe perſons, who are curious in collecting exotic plants, for the variety of their leaves; their flowers have very little beauty, nor do they often appear in this country. The plants are propagated eaſily by offsets from their roots, which they put out plentifully: theſe muſt be planted in pots filled with light earth, and plunged into a hot-bed, to promote their taking root;

and if they are afterward continued in the bark-ſtove, they will make great progreſs, and their leaves will be larger. They may be kept in a dry ſtove, upon ſhelves, after they are well eſtabliſhed in the pots, but they will not be ſo ſtrong as the other.

The twelfth ſort I was favoured with by Mr. Peter Collinſon, F. R. S. who procured the root from North America, where it naturally grows. This requires a moiſt ſoil, and a ſhady ſituation, but is hardy in reſpect of cold. It flowered two years in the garden at Chelſea, but in a very dry ſeaſon decayed. The flowers came up before there was any appearance of leaves; the ſpatha was large, and the piſtil ſhort and blunt; the female flowers were ranged each between a ſort of cheque work, which was diagonal to the piſtil; the flower decayed without any appearance of ſeed.

The ſeventeenth ſort riſes to the height of ſix or ſeven feet, with a green jointed ſtalk as large as a walking ſtick; the leaves are placed irregularly at the top of the ſtalks, growing in a cluſter: theſe are oblong, and of a light green colour; from between the leaves the flowers come out on the ſide of the ſtalk, having a long ſpatha of a pale green colour, marked with white ſpots, ſitting cloſe to the ſtem of the plant; at their firſt appearance they ſtand erect, ſoon after they are horizontal, and in a little time they decline downward; their lower part is ſwelling ſo far as the flowers are ranged on the piſtil, above which it is greatly contracted, and toward the top enlarges again, where it is a little open, ſo as to ſhew the naked part of the piſtil, but is twiſted again at the top. All the lower part cloſely folds over the piſtil, ſo that it is ſcarce diſcernible, unleſs the ſpatha is opened, which can only be done on one ſide, the other adhering cloſely to the piſtil, ſo far upward as the flowers extend the naked part of the piſtil only being ſeparated from it; ſo that the female flowers and ſtamina are ranged only upon one ſide of the piſtil, in which it differs from all the other ſpecies which I have ſeen.

It grows naturally in the ſugar iſlands, and other warm parts of America, chiefly in the low grounds; the whole plant abounds with an acrid juice, ſo that if a leaf or part of the ſtalk is broken, and applied to the tip of the tongue, it cauſes a very painful ſenſation, and occaſions the ſalivary ducts to ſwell, and brings on a great defluxion of ſaliva; the ſtalks of this plant are ſometimes applied to the mouths of the negroes by way of puniſhment, which is indeed bad enough. This ſort is propagated by cutting off the ſtalks into lengths of three or four joints, which muſt be laid to dry ſix weeks or two months; for if the wounded part is not perfectly healed over before the cuttings are planted, they will rot and decay: theſe ſhould be planted in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tan, being careful that they have little wet, until they have made good roots; when they are well eſtabliſhed at bottom, ſome of them may be placed in a dry ſtove, and others plunged into the tan-bed in the bark-ſtove, where they will make the greateſt progreſs, and produce more flowers than the others. It is a tender plant, ſo muſt be conſtantly kept in the ſtove, and ſhould have very little wet in winter.

The eighteenth ſort is a ſcandent plant, ſending out roots from the ſtem and branches, the leaves are large, heart-ſhaped, having three lobes or ears; the flowers are incloſed in a large ſpatha; but theſe are not fruitful in England. This is a tender plant, ſo requires to be conſtantly kept in the bark ſtove, and treated as other tender exotic plants, which come from hot countries. It is propagated by cutting off the branches, which readily put out roots, for all theſe ſpecies which are natives of hot countries, never produce ſeeds in England.

ARUM ÆTHIOPICUM. See CALLA.

ARUM SCANDENS. See DRACONTIUM.

ARUNDO. Lin. Gen. Plant. 76. The Reed.

The CHARACTERS are,

It is of the Graſs tribe; the flowers grow in ſpikes, and are included in a chaff which is oblong, pointed, and opens with two valves. The petals of the flowers are bivalve and longer than the empalement, having a down at their baſe, which riſes almoſt their length; it hath three hairy ſtamina, crowned with horned ſummits; in the center is ſituated an oblong germen, ſupporting two ſlender ſtyles which are hairy and reflexed, crowned with a ſimple ſtigma. The germen afterward becomes an oblong pointed ſeed, with long down adhering to its baſe.

This genus of plants is ranged in the ſecond ſection of Linnæus's third claſs, entitled Triandria Digynia, the flowers having three ſtamina and two ſtyles.

The SPECIES are,

1. ARUNDO (*Phragmitis*) calycibus quinqueflori paniculâ laxâ. Prod. Leyd. 66. *Reed with five flowers in each cup, growing in looſe panicles.* Arundo vulgaris paluſtris. J. B. 2. 485. *The common Marſh Reed.*
2. ARUNDO (*Donax*) calycibus trifloris paniculâ diffuſâ. Prod. Leyd. 66. *Reed with three flowers included in each cup, growing in diffuſed panicles.* Arundo ſativa quæ Donax Dioſcoridis. C. B. P. 17. This is ſometimes called by gardeners the Ever-green Reed, but for what reaſon I cannot imagine, becauſe the ſtalks decay every autumn, and new ſhoots ariſe from the roots in the ſpring.
3. ARUNDO (*Verſicolor*) Indica Laconica verſicolor. Mor. Hiſt. 3. p. 219. *Indian Reed with variegated leaves.* Arundo Indica variegata ſeu Laconica Theophraſti. Cornut. Can. 55.
4. ARUNDO (*Bamboa*) calycibus multifloris, ſpicis ternis ſeſſilibus. Lin. Sp. 120. *Reed with many flowers in the cup, and ſeſſile ſpikes, commonly called Bambu.* Beeſha. Hort. Mal. Vol. V. p. 119. *and the Bambu altera ſpecies.* Raii Hiſt. 1316.
5. ARUNDO (*Arborea*) caule arboreo foliis utrinque acuminatis. *Reed with a tree-like ſtalk, and leaves which are pointed at both ends.* Ily. Hort. Mal. Vol. I. p. 25.
6. ARUNDO (*Orientalis*) tenuifolia caule pleno ex quâ Turcæ calamos parant. Tourn. Cor. 39. *Eaſtern Reed with a narrow leaf and a full ſtalk, of which the Turks make their writing pens.*

The firſt ſort is ſo very common by the ſides of rivers and large ſtanding waters in divers parts of England, that it is needleſs for me to ſay any thing of its culture. This is cut in autumn, when the leaves begin to fall, and the ſtems are changed brown, for making hedges in kitchen-gardens, and for many other uſes.

The ſecond ſort, although native of a warm country, yet will bear the cold of our winters in the open ground, provided it is planted in a ſoil not too wet; and if the winter ſhould prove very ſevere, a little mulch be laid over the roots; it dies to the ſurface in autumn, and riſes again the ſucceeding ſpring; and if kept ſupplied with water in dry weather, will grow ten or twelve feet high the ſame ſummer; and is very proper to intermix with trees and ſhrubs, or tall plants and flowers in boſquets, where, by the oddneſs of its appearance, it will have a good effect, in adding to the variety. This is propagated by parting the roots early in the ſpring, before they begin to ſhoot, and will, in a year or two, if your ground be good, make very large ſtools, ſo that from each ſtool you may have eight or ten canes produced; but this never produces any ſpikes of flowers in England.

The ſtalks of this ſort are brought from Portugal and Spain, and are uſed by the weavers, as alſo to make fiſhing-rods.

The third ſort is ſuppoſed to be a variety of the ſecond, differing therefrom only in having variegated leaves. But this I much doubt, becauſe the ſort with variegated leaves is much tenderer than the other, ſo muſt be ſheltered from the froſt, otherwiſe it will not live through the winter in England. The plant never grows to a third part of the height of the other, and the leaves are narrower and much ſhorter; whether theſe differences may not be occaſioned by the weakneſs of the plant, I cannot take upon me to determine; for it is well known, that all thoſe plants which have variegated leaves, are much weaker than the plain

plain, and do not grow ſo large, nor will they reſiſt the cold ſo well. But as this is ſuppoſed to be a native of a different country, and by all the writers who have mentioned it ſuppoſed to be different, I have enumerated it among the ſpecies.

The two ſorts of Bambu are of great ſervice to the inhabitants of India, who make moſt of their common utenſils of the ſtems of theſe canes, which grow to a prodigious magnitude in thoſe countries.

We have plants of the fourth ſort in the Engliſh gardens, which are more than twenty feet high; and if the ſtoves in which they are kept were high enough to admit them, they would, according to appearance, riſe to twice that height. The ſhoots of this plant are of quicker growth than any other yet known, which riſes with an upright ſtalk; for a ſtrong ſhoot from the root will riſe to twenty feet in five or ſix weeks, as I have for ſeveral years obſerved. Some of theſe ſtems are as large as a man's wriſt, but in general as big as walking-ſticks, and when dried are as fit for that purpoſe as thoſe which are imported. The leaves of this ſort are much broader than thoſe of the fifth, particularly at their baſe; theſe leaves are generally put round the tea-cheſts in their package, and are faſtened together ſo as to form a kind of mat.

The fifth ſort is more rare at preſent in Europe, tho' it is the moſt common on the coaſt of Malabar.

They are both tender plants, ſo will not live in this country, unleſs they are preſerved in a warm ſtove; and as their roots ſpread very wide, they ſhould not be confined: therefore to have them produce ſtrong ſtems, they muſt be planted in large tubs, filled with rich earth, and plunged into the hot-bed in the bark-ſtove; and as they naturally grow in marſhy low places, they require plenty of water, eſpecially when the roots have filled the tubs in which they were planted. When the tubs decay, the boards may be removed, and the plants permitted to root into the tan, which will encourage them to grow to a larger ſize; but then there muſt be care taken when the bed is refreſhed with new tan, to leave a ſufficient quantity of the old tan about the roots of the plants; for if they are too much bared, and the new tan laid near them, when that heats, it will ſcorch their roots ſo that the plants are ſometimes deſtroyed by it. Both ſorts are propagated by ſlips from the roots, which ſhould be taken off in the ſpring, that they may be well eſtabliſhed before the winter.

The ſixth ſort is what the Turks make their writing pens withal; this grows in a valley near mount Athos, as alſo on the banks of the river Jordan, but there are none of the plants in England. This ſort may be managed as the Bambu.

ARUNDO SACCHARIFERA. See Sacharum.

ASARINA. Tourn. Inſt. R. H. 171. tab. 76. Baſtard Aſarum.

The Characters are,

The empalement is of one leaf, which is cut into five equal ſegments almoſt to the bottom. The flower is of one leaf, of the grining kind, having a long cylindrical tube, divided at the top into two lips, the upper one being divided into two parts, whoſe edges are reflexed. The lower lip is ſlightly cut into three parts which are obtuſe; the two lips join cloſe together, ſo as to form a kind of ſnout. It hath four ſtamina, two of which are longer than the other; in the center is placed a round germen ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma. The germen afterward turns to a round huſk, divided into two cells, which are full of roundiſh ſeeds.

This genus of plants is by Dr. Linnæus joined to his genus of Antirrhinum, which is ranged in the ſecond ſection of his fourteenth claſs, titled Didynamia Angioſpermia, the flowers having two long and two ſhorter ſtamina, and the ſeeds having a capſule.

The Species are,

1. Asarina (*Procumbens*) caule decumbente foliis oppoſitis reniformibus crenatis. *Baſtard Aſarum with a trailing ſtalk, and kidney-ſhaped leaves growing oppoſite, which are indented on their edges.* Aſarina hederula ſaxatilis. Lob. Icon. 601. *Aſarina, or Rock Ground-ivy.*
2. Asarina (*Erecta*) caule erecto foliis lanceolatis amplexicaulibus paniculâ dichotomâ. *Upright Baſtard Aſarum with ſpear-ſhaped leaves which embrace the ſtalks, and ſpikes of flowers coming out from the diviſion of the branches.* Penſtemon. Mitch. Gen. 14.

The firſt ſort is a low trailing annual plant, the branches extend little more than a foot each way, and are weak, ſo that unleſs they are ſupported, they lie upon the ground; theſe are garniſhed with leaves like thoſe of Ground-ivy, which grow by pairs; at the wings of the leaves the flowers come out ſingly on each ſide the ſtalk, which are ſhaped like thoſe of Snap-dragon, but have a long tube; they are of a worn-out purple colour at the top, but below of an herbaceous colour. Theſe come out in June, and the ſeeds ripen in September, which ſhould be ſown ſoon after, or permitted to ſcatter, for when they are ſown in the ſpring they ſeldom grow. The plants ſhould remain where they are ſown, and require no other care but to keep them clean from weeds, and thin them where they grow too cloſe. As there is not much beauty in this plant, two or three of them will be enough in a garden, for the ſake of variety. It grows naturally in Italy and the ſouth of France.

The ſecond ſort grows naturally in North America. This plant hath upright ſtalks, which grow a foot and a half high, and put out ſeveral ſide branches, garniſhed with oblong ſpear-ſhaped leaves ending in a point, which grow oppoſite, and embrace the ſtalks at their baſe; the flowers come out in ſhort looſe ſpikes from the diviſions of the ſtalks, which are ſhaped like thoſe of the former, but are leſs, and of a purple colour. They appear in June and July, and their ſeeds ripen in September.

The ſeeds of this ſort ſhould be ſown in the autumn, for thoſe which are ſown in the ſpring, ſeldom grow the ſame year, but remain in the ground till the following ſpring. When the plants are grown ſtrong enough to remove, they ſhould be tranſplanted into a ſhady border, which will prevent their flowering the ſame year; and in the autumn they may be planted in the borders of the flower-garden, where they will add to the variety. The roots ſeldom laſt above two or three years, ſo that young plants ſhould be annually raiſed.

ASARUM [from α privative, and χαίρω, *Gr.* to adorn, as much as to ſay, a plant not fit for ornament,] Aſarabacca.

The Characters are,

The flowers hath a thick bell-ſhaped empalement of one leaf, which is coloured, and ſlightly cut at the brim into three parts, which are reflexed. It hath no petals, but twelve ſhort awl-ſhaped ſtamina, crowned by oblong ſummits, which are faſtened in the middle to the ſtamina; at the bottom of the empalement is incloſed a thick germen, ſupporting a ſhort cylindrical ſtyle, crowned by a reflexed ſtigma, cut into ſix parts. The germen afterward turns to a thick capſule having ſix cells, containing ſeveral oval ſeeds.

This genus of plants is ranged in Linnæus's eleventh claſs, entitled Dodecandria Monogynia, the flowers having twelve ſtamina and one ſtyle.

The Species are,

1. Asarum (*Europæum*) foliis reniformibus obtuſis binis. Lin. Sp. Pl. 442. *Aſarabacca with kidney-ſhaped leaves, which have two blunt points.* Aſarum. C. B. P. 197. *Common Aſarabacca.*
2. Asarum (*Canadenſe*) foliis reniformibus mucronatis. Lin. Sp. Plant. 442. *Aſarabacca with kidney-ſhaped leaves ending in a point.* Aſarum Canadenſe. Cornut. Canad. 24. *Canada Aſarabacca.*
3. Asarum (*Virginicum*) foliis cordatis obtuſis glabris petiolatis. Flor. Virg. 162. *Aſarabacca with ſmooth, blunt, heart-ſhaped leaves having foot-ſtalks.* Aſarum Virginianum piſtolochiæ foliis ſubrotundis cyclaminis more maculatis. Pluk. Alm. 53.

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The firſt ſort hath thick fleſhy roots which are jointed, and ſend out fibres from every part; the leaves grow ſingly upon ſhort foot-ſtalks, ariſing immediately from the root; theſe are kidney-ſhaped, eared at the foot-ſtalk, and rounded at the top, where they are indented; they are ſmooth, and of a ſhining green colour: the flowers grow upon very ſhort foot-ſtalks cloſe to the ground, ſo are hid under the leaves. They are compoſed of a bell-ſhaped empalement, of a worn-out purple colour, which is cut into three at the top, where it turns backward: in the bottom is ſituated the germen, attended by twelve ſhort ſtamina, which afterward turns to a leathery ſeed-veſſel, divided into ſix cells, which contain ſeveral roundiſh ſeeds.

The leaves of the ſecond ſort are much larger than thoſe of the firſt, and ſtand on longer foot-ſtalks; theſe are pointed and hairy. The flowers are like thoſe of the other ſort, growing cloſe to the root, but are ſomewhat inclining to green on their outſide, in all other reſpects they agree.

The third ſort hath ſmooth blunt heart-ſhaped leaves, ſtanding on longer foot-ſtalks; theſe are veined and ſpotted on their upper ſurface like thoſe of the autumnal Cyclamen; the flowers of this are ſhaped like the others, but ſtand on longer foot-ſtalks, and are of a darker purple colour. Theſe flower in April and May, and their ſeeds ripen in July and Auguſt.

The firſt of theſe ſorts is very common, and hath been found wild in ſome parts of England, though but rarely; it delights in a moiſt ſhady place, and is increaſed by parting the roots in autumn. This is the ſort which is uſed in medicine.

The Canada ſort is equally hardy, ſo will endure our common winters in the open ground, being rarely hurt by froſts, if planted in a dry ſoil, for too much wet often occaſions the roots to rot in winter. This is propagated as the other.

The third ſort will alſo live in the open air in England, being ſeldom injured by froſt; but if the plants are too much expoſed to the ſun in ſummer, they ſeldom thrive well; therefore they ſhould be planted in a border where they may have only the morning ſun, in which ſituation they will ſpread and increaſe. Theſe two laſt grow naturally in ſeveral parts of North America.

ASCLEPIAS [ſo called from Æſculapius the firſt inventor of phyſic; it is alſo called Vincetoxicum, from vincere, to ovecome, and τοξικὰ, poiſons, q. d. a plant overcoming poiſons,] Hirundinaria, or Swallow-wort.

The CHARACTERS are,

The empalement is of one leaf, which is cut into five acute ſegments; the petal of the flower is alſo of one leaf, divided into five oval parts, which are reflexed; in the center is ſituated five nectarii which encompaſs the parts of generation; theſe have horns which turn toward the ſtamina, and are joined in a truncated body incloſed by five ſcales, which open every way. There are five ſtamina which are ſcarce viſible, which have five ſummits, ſituated between the nectarii, and incloſed by the ſcales of the truncated body. It hath two oval pointed germen, ſupporting two ſhort ſtyles crowned by a ſingle ſtigma. The germen afterward becomes two large, oblong, ſwelling pods ending in a point, having one cell, which opens with two valves filled with compreſſed ſeeds, lying over each other like tiles on a houſe, and are crowned with a ſoft down.

This genus of plants is ranged in Linnæus's ſecond ſection of his fifth claſs, entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. ASCLEPIAS (*Alba*) foliis ovatis baſi barbatis caule erecto umbelulis proliferis. Lin. Sp. Plant. 314. *Swallow-wort with oval leaves bearded at their baſe, an upright ſtalk, and a proliferous umbel.* Aſclepias albo flore. C. B. P. 303.
2. ASCLEPIAS (*Nigra*) foliis ovatis baſi barbatis caule ſuperne ſubvolubili. Lin. Sp. Plant. 216. *Swallow-wort with oval leaves bearded at their baſe, and the upper part of the ſtalk twining.* Aſclepias nigro flore. C. B. P. 303.
3. ASCLEPIAS (*Lutea*) foliis ovatis acutis caule infirmo, umbellis ſimplicibus. *Swallow-wort with oval pointed leaves, a weak ſtalk, and ſingle umbels.* Aſclepias anguſtifolia flore flaveſcente. H. R. Par.
4. ASCLEPIAS (*Verticillata*) foliis revolutis linearibus verticillatis caule erecto. Lin. Sp. Plant. 217. *Swallow-wort with narrow twiſting leaves growing in whorles, and an upright ſtalk.* Apocynum Marianum erectum linariæ anguſtiſſimis foliis umbellatum. Pluk. Mant. 17.
5. ASCLEPIAS (*Syriaca*) foliis ovalibus ſubtus tomentoſis caule ſimpliciſſimo umbellis nutantibus. Lin. Sp. Plant. 214. *Swallow-wort with oval downy leaves, a ſingle ſtalk, and nodding umbels.* This is the Apocynum majus Syriacum erectum. Corn. Canad. *Greater upright Syrian Dog ſbane.*
6. ASCLEPIAS (*Amœna*) foliis ovatis ſubtus piloſiuſculis caule ſimplici umbellis nectariiſque erectis. Lin. Sp. Plant. 214. *Swallow-wort with oval leaves, hairy on their under ſide, a ſingle ſtalk, with upright umbels and nectarii.* Apocynum floribus amœne purpureis corniculis ſurrectis. Hort. Elth. 31.
7. ASCLEPIAS (*Purpuraſcens*) foliis ovatis ſubtus villoſis caule ſimplici umbellis erectis nectariis reſupinatis. Lin. Sp. Plant. 214. *Swallow-wort with oval leaves, hairy on their under ſide, a ſingle ſtalk, and upright umbels with inclining nectarii.* Apocynum erectum Noveboracenſe foliis minùs incanis flore ex obſoleto dilutè purpuraſcente. Par. Bat. 33.
8. ASCLEPIAS (*Variegata*) foliis ovatis rugoſis nudis caule ſimplici umbellis ſubſeſſilibus pedicellis tomentoſis. Lin. Sp. Plant. *Swallow-wort with rough, naked, oval leaves, a ſingle ſtalk, umbels growing cloſe to the ſtalk, having woolly foot-ſtalks.* Apocynum vetus Americanum Wiſank dictum. Hort. Elth. 32.
9. ASCLEPIAS (*Incarnata*) foliis lanceolatis caule ſupernè diviſo, umbellis erectis. Lin. Sp. Plant. 215. *Swallow-wort with ſpear-ſhaped leaves, the upper part of the ſtalk divided, and erect double umbels.* Apocynum minùs rectum Canadenſe. Corn. Canad. 9.
10. ASCLEPIAS (*Decumbens*) foliis villoſis caule decumbente. Lin. Sp. Plant. 216. *Swallow-wort with hairy leaves, and a declining ſtalk.* Apocynum Carolinianum aurantiacum piloſum. Pet. H. Sicc. 90.
11. ASCLEPIAS (*Tuberoſa*) foliis alternis lanceolatis caule divaricato piloſo. Lin. Sp. Plant. 217. *Swallow-wort with ſpear-ſhaped leaves growing alternate, and a hairy divided ſtalk.* Apocynum Novæ Angliæ hirſutum tuberoſa radice floribus aurantiis. H. L. 649. *commonly called Orange Apocynum.*
12. ASCLEPIAS (*Glabra*) foliis lineari-lanceolatis glabris caule fruticoſo umbellis lateralibus. *Swallow-wort with ſmooth, narrow, ſpear-ſhaped leaves, a ſhrubby ſtalk, and umbels coming out of the ſides.* Apocynum erectum Africanum villoſo fructu ſalicis folio glabro anguſto. Par. Bat. 23.
13. ASCLEPIAS (*Fruticoſa*) foliis lanceolatis glabris umbellis ſimplicibus lateralibus caule fruticoſo. *Swallow-wort with ſmooth ſpear-ſhaped leaves, ſingle umbels coming from the ſides of the branches, and a ſhrubby ſtalk.* Apocynum erectum Africanum folio ſalicis lato glabro fructu villoſo. Par. Bat. 24.
14. ASCLEPIAS (*Villoſa*) foliis lanceolatis villoſis acutis umbellis ſimplicibus erectis caule fruticoſo. *Swallow-wort with hairy ſpear-ſhaped leaves, ſingle upright umbels, and a ſhrubby ſtalk.* Apocynum erectum Africanum villoſo fructu ſalicis folio lato ſubhirſuto. Par. Bat. 24.
15. ASCLEPIAS (*Rotundifolia*) caule erecto fruticoſo, foliis ſubrotundis amplexicaulibus, umbellis congeſtis. *Swallow-wort with an upright ſhrubby ſtalk, roundiſh leaves embracing it, and cloſe umbels.* Apocynum erectum fruticoſum folio ſubrotundo glauco. Par. Bat. 37.
16. ASCLEPIAS (*Nivea*) foliis lanceolatis glabris caule ſimplici umbellis erectis lateralibus ſolitariis. Lin. Sp. Plant. 215. *Swallow-wort with a ſingle ſtalk, ſmooth ſpear-ſhaped leaves, and upright ſingle umbels, proceeding from the wings of the leaves.* Apocynum Americanum foliis Amygdali longioribus. Plum. Cat. 2.
17. ASCLEPIAS (*Curaſſavica*) foliis lanceolatis petiolatis glabris caule ſimplici umbellis erectis ſolitariis. Lin. Sp.

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Sp. Plant. 215. *Swallow-wort with ſmooth ſpear-ſhaped leaves, having foot-ſtalks, a ſingle ſtalk, and upright ſingle umbels.* Apocynum radice fibroſâ, petalis coccineis corniculis croceis. Hort. Elth. 34. *commonly called Baſtard Ipecacuana.*

18. Asclepias (*Gigantea*) foliis amplexicaulibus oblongo-ovalibus. Flor. Zeyl. 112. *Swallow-wort with oblong, oval leaves, embracing the ſtalks.* Apocynum erectum majus latifolium Indicum. Pluk. Alm. 35. tab. 175. f. 3.

19. Asclepias (*Scandens*) foliis oblongo-lanceolatis ſubhirſutis caule fruticoſo ſcandente umbellis lateralibus congeſtis. *Swallow-wort with oblong, ſpear-ſhaped, hairy leaves, a ſhrubby climbing ſtalk, and compact umbels proceeding from the ſide.*

The firſt ſort is the common Swallow-wort of the ſhops. This is called Vincetoxicum & Hirundinaria, in Engliſh Swallow-wort, or tame poiſon, from its ſuppoſed virtue, being accounted a mighty counter poiſon. The root is the only part which is uſed: it is compoſed of many ſtrong fibres, which are connected at the top, like thoſe of Aſparagus, from which ariſe many foot-ſtalks, in number proportional to the ſize of the roots; which grow near two feet high, are very ſlender at the top; the leaves are oval, ending in a point, and placed by pairs. The flowers are white, growing in umbels near the top of the ſtalk, from which are ſent out ſmaller umbels; the flowers are of one leaf, cut into five parts, in the center of which are placed five horned nectarii, among which the ſtamina and ſtyles are ſituated. After the flower is paſt, the two germen become two long pointed pods, incloſing many compreſſed ſeeds, which are crowned with a ſoft white down. The flowers appear in June, and the ſeeds ripen in September. This ſort grows naturally in the ſouth of France, Spain, and Italy.

The ſecond ſort agrees with the firſt, in the ſhape of its roots, leaves, and flowers, but the ſtalks extend to a greater length, and toward their upper part twiſt round any ſticks, or other plants near them, and the flowers of this are black. This flowers at the ſame time with the firſt, and ſeldom fails to ripen its ſeeds in England.

The third differs from both the other in the narrowneſs of its leaves, and weakneſs of its ſtalks; the umbels of flowers are ſingle, and of a yellow colour. This flowers at the ſame time with the two former ſorts, and generally perfects ſeeds in England. There is a variety of this with broader leaves, which may have come from the ſeeds of this.

Theſe plants are common in the Engliſh gardens, and natives of the ſame countries. They are generally propagated by parting their roots, eſpecially the firſt ſort, which ſeldom produces ſeeds in England. The beſt time for this is in autumn, when their ſtalks begin to decay. They ſhould not be planted nearer together than three feet, for the fibres of their roots extend to a conſiderable diſtance. They are very hardy plants, ſo will thrive in any ſituation, but love a dry ſoil. Their ſtalks die in autumn, and new ones riſe in the ſpring.

The fourth ſort grows naturally in North America; this riſes with ſlender upright ſtalks, garniſhed with very narrow leaves, growing in whorles round the ſtalks, at the top of which grow umbels of ſmall, white, ſtarry flowers. Theſe appear in July, but are never ſucceeded by pods in England, ſo are only propagated by parting their roots; which ſhould be done in the ſpring, before they put out new ſhoots. The roots ſhould be planted in a warm border and dry ſoil, and in winter covered with old tan, to prevent the froſt from penetrating the ground.

The fifth ſort creeps greatly at the root, ſo that it will ſoon ſpread over a large ſpot of ground; this ſends up ſtrong ſtems upward of four feet high, which have thick oval leaves placed oppoſite, hoary on their under ſides. Toward the top of the ſtalks the umbels of flowers come out on the ſide; theſe are of a worn-out purple colour, ſmelling ſweet, and nod downward; ſometimes theſe are ſucceeded by large oval pods, filled with flat ſeeds, crowned by a long ſoft down; it flowers in July. This propagates faſt enough by its creeping root, and will grow in any ſoil or ſituation. It may be tranſplanted any time after the ſtalks decay, or before the roots ſhoot in the ſpring.

The ſixth ſort hath a perennial root, which ſends up ſeveral upright ſtalks in the ſpring, about two feet high, garniſhed with oval leaves growing oppoſite; at the top of the ſtalks the umbels of flowers are produced, which are of a bright purple colour, making a pretty appearance in July, but are not ſucceeded by pods in England; this muſt be treated as the fourth ſort. I was favoured with this by Mr. Peter Collinſon, F. R. S.

The ſeventh ſort grows naturally in North America. This hath a perennial root, which ſends out ſingle ſtalks near three feet high, garniſhed with oval leaves, hairy on their under ſide, placed oppoſite; the flowers grow in erect umbels at the top, and the nectarii are declining. They are of a worn-out purple colour reſembling thoſe of the fifth; it is very hardy, and propagates faſt by its creeping roots, but never produces ſeeds in England. This will grow in any ſoil or ſituation, and may be tranſplanted when the ſtalks decay.

The eighth ſort reſembles the ſeventh, but the leaves are rough, and the umbels of flowers are more compact, and come out on the ſide of the ſtalk; theſe are of an herbaceous colour, and are not ſucceeded by pods in this country, but is propagated by roots as the former ſort.

The ninth ſort came firſt from Canada, but hath ſince been found growing naturally in ſeveral other parts of America. This hath a perennial root, which puts out ſeveral upright ſtalks about two feet high, which have oblong ſmooth leaves placed by pairs; at the top are produced cloſe umbels of purple flowers; theſe appear in Auguſt, but are not ſucceeded by ſeeds here, ſo is only propagated by parting the roots, which do not increaſe very faſt, therefore the plant is not very plenty in the gardens; it is hardy enough to live abroad, if it is planted in a dry ſoil.

The tenth ſort is a native of North America, but is hardy enough to live abroad in England, if it is planted in a warm ſituation and a dry ſoil. This hath declining ſtalks, which are hairy, a foot and a half long; the leaves are narrow, hairy, and placed oppoſite; the umbels grow at the extremity of the branches, which are compact, the flowers are of a bright Orange colour. It is propagated by ſeeds, which ſhould be ſown in pots, and plunged into a moderate hot-bed to bring up the plants, which ſhould be inured to the open air ſo ſoon as the weather will permit; for if they are drawn up weak, they ſeldom recover it. When they are of a proper ſtrength to remove, they ſhould be ſhaken out of the pots, and planted in a warm border ſix inches aſunder, being careful to ſhade them from the ſun until they have taken freſh root, but they muſt have very little water given them, for they are milky plants, which rot with much wet. During the ſummer they muſt be kept clean from weeds, and when their ſtalks decay in autumn, ſome rotten tan ſhould be laid over the ground to keep out the froſt, which ſhould be removed in the ſpring before the plants put out new ſhoots; the following ſummer they will require no other care than before, and alſo the next winter they muſt be covered as in the former. The ſecond ſpring the roots may be tranſplanted where they are to remain; the roots will then be ſtrong enough to flower in ſummer, and will laſt ſeveral years, eſpecially if they are covered with tan to keep out the froſt, but they ſhould not be afterward removed; for when the roots are large, they will not bear tranſplanting.

The eleventh ſort is a native of the ſame countries, and is much like the former, but differs in having upright ſtalks, and the leaves growing alternate. The roots of this grow to a large ſize, ſo will not bear

tranſplanting after the plants are two years old. It is propagated by ſeeds, which ſhould be treated in the manner directed for the former. Theſe flower the latter end of July and in Auguſt; and in warm ſeaſons, ſometimes ripen their ſeeds in England. Neither of theſe plants will live long in pots, for which reaſon I have recommended their being planted in the full ground; but they ſhould have a warm ſituation.

The twelfth, thirteenth, and fourteenth ſorts grow naturally at the Cape of Good Hope. I have alſo received ſeeds of the thirteenth ſort from Alexandria; and Mr. Peter Collinſon, F. R. S. gave me ſome ſeeds of it, which were ſent him from Minorca; but it is not certain that it grows naturally there, but may have been carried thither from Africa.

Theſe riſe with upright ſhrubby ſtems to the height of ſeven or eight feet, and divide into many branches; thoſe of the twelfth ſort are garniſhed their whole length with long, narrow, ſmooth leaves, ending in a point; from the wings of the leaves the umbels of flowers are produced, upon long foot-ſtalks; the flowers are white, and grow looſely on the umbel; theſe are frequently ſucceeded by ſhort, thick, ſwelling pods, ending in a point, which are thick ſet with hairs, and filled with compreſſed ſeeds, crowned with a ſoft down. This flowers from June to October, and the ſeeds ripen in winter.

The thirteenth ſort differs from the twelfth, in having much broader leaves, which are of a darker green; the umbels of flowers are ſmaller, grow upon ſhorter foot-ſtalks, and the ſingle flowers are larger. This flowers at the ſame time with the former.

The fourteenth ſort doth not riſe ſo high as either of the former, and the branches grow at a much greater diſtance; the leaves are ſhorter, and are covered on both ſides with ſhort hairs. The flowers grow in ſmall looſe umbels, and are white; theſe appear in the ſame ſeaſon with the former.

Theſe are propagated by ſeeds, which may be ſown in April on a bed of light earth in the open air, and when the plants are three or four inches high, they ſhould be each planted in a ſmall pot filled with light earth, and ſhaded until they have taken new root, then they may be placed with other exotic plants in a ſheltered ſituation till October, when they muſt be removed into the green-houſe, and during the winter ſhould have but little water; for as they abound with a milky juice, much wet will rot them. The only care theſe will require, is to ſhift them into larger pots as they advance in their growth; but care ſhould be taken not to put them in pots too large, and in the ſummer to place them abroad with other plants from the ſame country.

Theſe three ſorts may alſo be propagated by cuttings, which if planted in July or Auguſt, in a ſhady border, will ſoon take root, and may ſoon after be taken up and planted in pots, and managed as the ſeedling plants. The thirteenth ſort hath lived in the open air in mild winters in the Chelſea garden, but in cold winters they are conſtantly deſtroyed.

The fifteenth ſort grows with an upright ſhrubby ſtalk to the height of ſix or ſeven feet, dividing toward the top into three or four branches, garniſhed their whole length with ſtiff roundiſh leaves, which cloſely embrace them. Toward the upper part, the flowers are produced on their ſides, growing in ſhort compact umbels. Theſe are of an herbaceous colour, ſo make but little appearance; they come out chiefly in autumn and winter. This grows naturally at the Cape of Good Hope, and requires the ſame culture as the former ſorts. There is a variety of this with deep green leaves, which ſome have ſuppoſed to be a different ſpecies, but I have raiſed it from the ſame ſeeds.

The ſixteenth ſort grows naturally in the warm parts of America, the ſeeds were ſent me from La Vera Cruz. This riſes with ſingle ſtalks four feet high, garniſhed with ſmooth ſpear-ſhaped leaves, ending in a point; toward the top of the ſtalk the umbels of flowers are produced from the wings of the leaves, which are white, and ſtand erect; theſe are ſucceeded by oblong pointed pods, filled with compreſſed ſeeds, crowned with ſoft down. It flowers in June and July, and the ſeeds ripen in October.

This plant is tender, ſo muſt be raiſed in a hot-bed, and tranſplanted into pots filled with rich earth, and plunged into the tan-bed in the ſtove. It muſt have but little water, and conſtantly remain in the ſtove, otherwiſe the plants will not thrive here.

The ſeventeenth ſort is alſo a native of the warm parts of America, the roots of which have been ſent to England for Ipecacuana, from which it may be eaſily diſtinguiſhed by its form, this being compoſed of a great number of ſmall fibres; whereas the true Ipecacuana hath jointed roots, which run deep into the ground, and are fleſhy. There have been may accounts of the bad effects of the uſe of theſe roots, as alſo of the poiſonous quality of the plant; ſo that the public ſhould be cautioned not to make uſe of it, and alſo to be careful not to let the milky juice of the plant mix with any thing which is taken inwardly.

This plant riſes five or ſix feet high, with upright ſtems, garniſhed with ſmooth oblong leaves, placed oppoſite; toward the top of the branches the umbels of flowers come out, which are ſingle, and grow erect; the petals of the flowers are of a ſcarlet colour; and the horny nectarii in the middle are of a bright Saffron colour, which make a pretty appearance; there is commonly a ſucceſſion of theſe flowers on the ſame plant from June to October. The flowers are ſucceeded by long taper pods filled with ſeeds crowned by a ſoft down, which ripen late in the autumn.

It is propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring, and the plants ſhould be treated in the ſame manner as is before directed for the former ſort; the roots of this may be continued three or four years, but after the ſecond year the plants grow naked, and do not produce ſo many flowers as before; ſo that it is much better to raiſe young plants to ſucceed the other, eſpecially as they produce plenty of ſeeds in England.

The eighteenth ſort riſes with upright ſtems ſix or ſeven feet high, which are garniſhed with thick oval leaves placed oppoſite. The umbels of flowers are ſingle; the flowers are white, of a ſtar figure, having five points; the pods of this ſort are very large, in ſhape like an ox's teſticles, and are filled with flat ſeeds, lying over each other like tiles on a houſe. I received the ſeeds of this ſort from the Right Hon. the Earl of Northumberland, who procured it from India.

This plant is tender, ſo muſt be preſerved conſtantly in the ſtove, and treated in the ſame manner as the two former ſorts, and ſhould have very little wet, eſpecially in the winter.

The nineteenth ſort I received from Carthagena; this hath climbing ſtalks, which faſten themſelves to the neighbouring plants, and riſe to the height of ten or twelve feet; the joints of the ſtalks are pretty diſtant from each other; at each are produced two oblong, ſpear-ſhaped, hairy leaves, growing oppoſite, upon very ſhort foot-ſtalks; the umbels of flowers come out from the wings of the leaves, which are very compact, and the flowers are of a ſulphur colour. Theſe appear in Auguſt, but have not been ſucceeded by ſeeds in England.

This plant is tender, ſo muſt be conſtantly preſerved in the ſtove, and treated in the ſame way as is directed for the former ſorts.

ASCYRUM. Lin. Gen. Plant. 737. Hypericoides. Plum. Nov. Gen. 51. tab. 7. St. Peterſwort.

The CHARACTERS are,

The empalement is four leaved, the two outer being narrow and oppoſite, the two inner are broad, heart-ſhaped, and erect. The flower hath four oval petals, the two outer are large and placed oppoſite, the two inner are ſmall. In the center is ſituated an oblong germen, with a very ſhort ſtyle, crowned by a ſingle ſtigma. This is attended by a great number of briſtly ſtamina, which are joined

joined at their baſe into four bodies, and are crowned with round ſummits. The germen afterward becomes an oblong pointed ſeed-veſſel, opening in two valves, and filled with ſmall round ſeeds. The ſeed-veſſel is incloſed by the two large leaves of the empalement.

This genus of plants is ranged in the third ſection of Linnæus's eighteenth claſs, entitled Polyadelphia Polyandria, the flowers having many ſtamina, which are joined in ſeveral bodies.

The SPECIES are,

1. ASCYRUM (*Crux Andreæ*) foliis ovatis caule tereti paniculâ dichotomâ. Lin. Sp. Plant. 787. *St. Peterſwort with oval leaves, a taper ſtalk, and flowers growing in looſe ſpikes from the diviſions of the branches.* Hypericoides ex terrâ marianâ floribus exiguis luteis. Pluk. Mant. 104. *called St. Andrew's Croſs.*
2. ASCYRUM (*Villoſum*) foliis hirſutis caule ſtricto. Lin. Sp. Plant. 788. *St. Peterſwort with hairy leaves and a ſtiff ſlender ſtalk.* Hypericum Virginianum fruteſcens piloſiſſimum. Pluk. Alm. 189.
3. ASCYRUM (*Hypericoides*) foliis oblongis, ramis ancipitibus. Lin. Sp. 1108. *St. Peterſwort with oblong leaves and a flatted ſtalk.* Hypericoides fruteſcens erecta flore luteo. Plum. Nov. Gen. 51.

The firſt ſort is a low plant, whoſe ſtalks ſeldom riſe more than ſix inches high, garniſhed with ſmall oval leaves, placed by pairs; the ſtalks are ſlender, and divide into two toward the top. From between the diviſion of the branches, the looſe ſpikes of yellow flowers are produced very ſmall, ſo make no appearance; therefore the plant is ſcarce worthy of a place in gardens, except for the ſake of variety. The root is perennial, and the plant may be propagated by laying down its branches; it loves a moiſt ſoil and a ſhady ſituation. This grows naturally in North America; I was favoured with this plant by the Right Hon. the Earl of Northumberland, who procured it from thence.

The ſecond ſort grows about three feet high, with upright ſtalks, garniſhed with hairy oblong leaves; the flowers are produced at the ends of the ſtalks, which are of the ſhape and colour with common St. Johnſwort, but have only four leaves. This hath a perennial root, but the ſtalks decay every autumn. It may be propagated by parting the roots in autumn, when the ſtalks decay, and ſhould be planted in a loamy ſoil; this ſome years will produce ſeeds in England. It grows naturally in Virginia.

The third ſort grows naturally in South Carolina, from whence I received the ſeeds. This plant riſes a foot and a half high, with flat ſtalks, garniſhed with oval ſmooth leaves growing oppoſite; the ſtalks are terminated by three or four yellow flowers, growing cloſe together, which are larger than thoſe of the common St. Johnſwort, and the petals of the flowers are hollow. This ſort rarely produces ſeeds in England, but it may be propagated by cuttings made of the young ſhoots in May, which, if planted in pots, and plunged into a very moderate hot-bed, will take root in five or ſix weeks, when they may be tranſplanted into a warm border, where they will endure the cold of our ordinary winters; but in ſevere froſts they are frequently deſtroyed, unleſs the roots are covered with tan to keep out the froſt.

Theſe plants have little beauty, ſo are ſeldom cultivated but in botanic gardens for the ſake of variety.

ASCYRUM BALEARICUM. } See HYPERICUM.
ASCYRUM MAGNO FLORE. }
ASCYRUM VULGARE. }

ASH-TREE. See FRAXINUS.

ASHES are eſteemed a good ſuperficial dreſſing for corn and meadow land, as they give a new ferment to ſuch lands as are in any degree ſluggiſh and inactive, and enrich thoſe which are jejune and ſlow, being endowed with ſingular qualities to make them prolific.

All ſorts of aſhes, indeed, contain in them a very rich fertile ſalt, and are the beſt manure of any to lay upon cold wet land; but then they ought to be kept dry, that the rain may not waſh away their ſalt. Experience has ſhewn, that the aſhes of any ſort of vegetable are very advantageous to land, by the improvement that has been made in moſt places in England, by burning bean-ſtalks, fern, furze, heath, ſedge, ſtraw, ſtubble, &c.

Coal aſhes, or ſuch as are made of Newcaſtle, Scotch, and other pit-coal, are much recommended by ſome; but the firſt are moſt approved of, becauſe they contain a greater quantity of nitrous and ſulphureous matter than the others, though the reſt are good.

There is no dreſſing ſo good for graſs ground as the ſea-coal aſhes, eſpecially for cold wet land, and where it is ſubject to ruſhes or moſs; for theſe will deſtroy both, and occaſion the graſs to be much finer: but this dreſſing ſhould be laid on the land early in winter, otherwiſe they will do harm the firſt ſummer; for when they are laid on the ground in the ſpring, they will cauſe the graſs to burn as ſoon as the warmth comes on; whereas thoſe that were put on early enough to receive the winter's rain, will be waſhed into the ground before the warm ſeaſon, whereby the graſs will have the benefit of it the firſt year. Where the land is poor and ſour, producing ruſhes and moſs only, there ſhould be at leaſt twenty loads of aſhes laid upon each acre; for a ſlight dreſſing will not anſwer the deſign of killing weeds and moſs, nor will it be ſufficient to enrich land which is cold and ſluggiſh, therefore it will be better to lay a good dreſſing at firſt, than to do it at ſeveral intervals; for one ſubſtantial dreſſing will continue the land longer in heart than three ſlight ones, beſides the advantage before-mentioned.

But theſe ought to be applied ſuperficially, and not too near the roots of plants; and if ſo, there are few plants but will receive benefit by them, by their nitrous and ſulphureous qualities being waſhed down by the rain, which will open by the ſtrength of water, and cauſe it to heave, in ſome degree, as lime will do when water is thrown upon it.

Wood-aſhes are commended as the principal of ſuperficial dreſſings for land, in that they contain a vegetative kind of ſalt.

Kiln-aſhes, i. e. ſuch as are made of ſtraw, furze, &c. are, by ſome, accounted as good as any of the ſpirituous improvements of lands that are lightiſh; but for ſuch as are heavy, they are looked upon as ſcarce ſolid and ponderous enough. Theſe aſhes the maltſters in the weſt country ſift over their corn and graſs, which are ſuppoſed, by their heat, to cauſe a fermentation, a hollowneſs and looſeneſs in the mould; by which means the rains enter it the more eaſily, and diſpoſe the earth for giving up an aſſumption of its vegetative augment.

But theſe being light, ought never to be ſtrewed nor ſifted in windy weather, becauſe they would be blown away; and if it could be ſo ordered as to be done juſt before ſnow or rain, it would be the better.

Soap-aſhes (i. e. after the ſoap-boilers have done with them) are very proper for lands that are very cold and ſour, and to kill weeds of all ſorts: and Sir Hugh Plat mentions one at Ware, who having a piece of land over-run with broom and furze, manured it with ſoap-aſhes, and had an incredible crop of wheat for ſix years ſucceſſively.

Pot-aſhes, after the pot-aſh men have done with them, are eſteemed good for moſt ſorts of land; but as they have been wet, and moſt of the ſalt drawn off by the lee, they ought to be laid on much thicker than other aſhes.

Turf-aſhes are very good for all ſorts of land, but eſpecially for clay lands, but will be much better if mixed with lime.

But all theſe aſhes ought to be kept dry, from the time they are made till they are uſed, elſe the rains will both waſh away their goodneſs, and alſo make them clod, eſpecially ſome of the laſt mentioned, which will prevent their ſpreading.

And beſides, one load of aſhes that has been kept dry, will go as far as two that have been expoſed to the rain: and coal-aſhes, if moiſtened with

cham-

chamber-lye or ſoap-ſuds, will greatly add to their ſtrength.

All calcined vegetables cauſe a fiery heat and vegetation, and, when wet comes, ſet the ground to work, by a ſubtle inſinuation unlocking the clods, and quickening the ſluggiſhneſs of the earth, according to that eſtabliſhed maxim among naturaliſts, That all fermentation is cauſed by the interpoſition or mixture of different qualities one with the other.

It is after this manner that coal-aſhes operate ſo admirably in looſening and mouldering ſtiff clayey grounds, and, as it is uſually termed, making it rough, aſhy, or ſandy-like: and after the ſame manner, ſand mixed with clay does well, eſpecially when it is impregnated with ſaline qualities.

ASPALATHUS. Lin. Gen. Plant. 767. African Broom.

The Characters are,

The empalement is of one leaf, which is cut into five equal ſegments at the top; the flower is of the butterfly kind. The ſtandard is hairy, compreſſed, and blunt-pointed; the wings are blunt, moon-ſhaped, and ſpread open, being ſhorter than the ſtandard; the keel is bifid, and of the ſame length as the wings. It hath ten ſtamina, nine of which are joined and covered by the ſtandard, the other ſtanding ſeparate; theſe are crowned by oblong ſingle ſummits. In the bottom is ſituated an oval germen ſupporting a ſingle ſtyle, crowned by a pointed ſtigma. The germen afterward becomes an oval oblong pod, incloſing one or two kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Dr. Linnæus's ſeventeenth claſs, entitled Diadelphia Decandria, the flowers having ten ſtamina joined in two bodies.

The Species are,

1. Aspalathus (*Chenopoda*) foliis confertis ſubulatis mucronatis hiſpidis floribus capitatis. Lin. Sp. Plant. 711. *Aſpalathus with rough, pointed, awl-ſhaped leaves, growing in cluſters, and flowers in heads.* Geniſta Africana lutea, floribus hirſutis in capitula lanuginoſa conglobatis foliis corrodæ aculeatis ſubhirſutis. Herm. Cat. 11. *Yellow African Broom.*
2. Aspalathus (*Indica*) foliis quinatis ſeſſilibus pedunculis unifloris. Lin. Sp. Plant. 712. *Five-leaved Aſpalathus growing cloſe to the branches, and one flower on a foot-ſtalk.* Dorycnium Indicum floribus ſingularibus rubris in pedicellis oblongis ſiliquis perexiguis. Raii Supp. 471.
3. Aspalathus (*Argentea*) foliis trinis linearibus ſericeis ſtipulis ſimplicibus mucronatis floribus ſparſis tomentoſis. Lin. Sp. Plant. 713. *Aſpalathus with three narrow ſilky leaves, ſingle-pointed ſtipulæ, and woolly flowers growing thinly.* Cytiſus Africanus anguſtifolius ſericea lanugine argentatus ſpicâ lagopoide. Pluk. Mat. 63.

Theſe plants grow naturally about the Cape of Good Hope, from whence I have received their ſeeds. The firſt is a low ſhrub growing about three feet high, with ſlender branches, garniſhed with many trifoliate leaves growing in cluſters, which are awl-ſhaped, pointed, and rough; at the ends of the branches the flowers come out, which are yellow, collected in woolly heads; theſe are rarely ſucceeded by pods in England. It is propagated by ſeeds, which muſt be obtained from the country where the plants grow naturally, and ſhould be ſown in pots filled with light earth as ſoon as they arrive: if this happens in the autumn, the pots ſhould be plunged into an old tan-bed whoſe heat is ſpent, where they may remain till ſpring, when they ſhould be removed into a moderate hot-bed, which will bring up the plants. But when the ſeeds arrive in the ſpring, the pots in which the ſeeds are ſown ſhould be then plunged into a moderate hot-bed; and in warm weather the glaſſes muſt be ſhaded in the middle of the day, and the pots frequently refreſhed with water. Thoſe ſeeds which are ſown in the ſpring, ſeldom grow the ſame year, therefore in the autumn the pots ſhould be put into an old tan-bed, as was directed for thoſe ſown in autumn, and afterward put in a hot-bed the following ſpring. When the plants come up, and are ſtrong enough to remove, they ſhould be each planted into a ſeparate ſmall pot filled with light earth, and plunged into a moderate hot-bed, to encourage their rooting again; and ſo ſoon as they are eſtabliſhed in the pots, they ſhould by degrees be inured to the open air, into which they ſhould be removed in ſummer, placing them in a ſheltered ſituation, where they may remain till autumn, when they muſt be carried into the green-houſe, and in winter ſhould have but little water.

The ſecond ſort grows about five feet high, with ſlender branches, garniſhed with leaves growing by fives cloſe to the branches; the flowers come out ſingly upon long foot-ſtalks, which are of a pale red colour; theſe appear in Auguſt, but ſeldom are ſucceeded by pods here. This is propagated as the former, and requires the ſame treatment.

The third ſort riſes about four feet high, with a ſhrubby ſtalk dividing into ſlender branches, garniſhed with ſilky leaves, coming out by threes; the flowers are purple, downy, and grow thinly on the branches. This is propagated as the two former, and muſt be treated in the ſame way as is directed for the firſt ſort. It flowers late in the ſummer.

ASPARAGUS, the firſt ſprigs of herbs before unfolded into leaves, and the youngeſt and tendereſt branches that are eatable, are called Aſparagus.

ASPARAGUS [Ασπάραγος, *Gr.* ſignifies a young ſhoot putting forth,] Aſparagus, Sparagus, corruptly called Sparrowgraſs.

The Characters are,

There are male and hermaphrodite flowers upon different roots; the male flowers are tubulous, compoſed of ſix narrow petals, which do not ſpread open, having ſix ſhort ſtamina, but no ſtyle or ſtigma; theſe are barren: the hermaphrodite flowers have ſix petals which ſpread open, ſix ſtamina ſurrounding the germen, and a ſhort ſtyle crowned by an obtuſe ſtigma which is prominent. The germen afterward becomes a round berry, having three cells, each including one or two ſeeds, rounded on their outſide, but angular where they join.

This genus of plants is ranged by Dr. Linnæus in the firſt ſection of his ſixth claſs, titled Hexandria Monogynia, but with more propriety ſhould be placed in the ſecond order of his twenty-firſt claſs, which includes thoſe plants as have the Polygamia on different roots.

The Species are,

1. Asparagus caule herbaceo erecto, foliis ſetaceis, ſtipulis duabus interioribus, una exteriore. Flor. Suec. 272. *Aſparagus with an upright herbaceous ſtalk, briſtly leaves, having two inner and one outer ſtipula.* Aſparagus ſativa. C. B. P. 489. *Garden Aſparagus.*
2. Asparagus (*Maritimus*) caule inermi herbaceo foliis teretibus longioribus faſciculatis. *Aſparagus with a ſmooth herbaceous ſtalk, and longer taper leaves growing in cluſters.* Aſparagus maritimus craſſiore folio. C. B. P. 490.
3. Asparagus (*Acutifolius*) caule inermi fruticoſo, foliis aciformibus rigidulis perennantibus mucronatis æqualibus. Lin. Sp. 449. *Aſparagus with a ſhrubby ſmooth ſtalk and rigid leaves, with points which abide in winter.* Aſparagus foliis acutis. C. B. P. 490.
4. Asparagus (*Albus*) ſpinis retroflexis, ramis flexuoſis, foliis faſciculatis angulatis muticis deciduis. Lin. Sp. 449. *Aſparagus with flexible branches and chaffy leaves growing in cluſters, which fall off in winter.* Aſparagus aculeatis ſpinis horridus. C. B. P. 490.
5. Asparagus (*Retrofractus*) aculeis ſolitariis ramis reflexis retrofractiſque, foliis faſciculatis. Lin. Sp. Plant. 313. *Aſparagus with ſingle ſpines, reflexed branches, and leaves growing in cluſters.* Aſparagus Africanus tenuifolius, viminalibus virgis, foliis laricis ad inſtar ex uno puncto numeroſis ſtellatim poſitis. Pluk. Alm. 40. tab. 375.
6. Asparagus (*Aphyllus*) aphyllus ſpinis ſubulatis ſtriatis inæqualibus divergentibus. Hort. Cliff. 122. *Aſparagus without leaves, and awl-ſhaped unequal ſpines which ſpread from each other.* Aſparagus aculeatus alter,

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alter, tribus aut quatuor ſpinis ad eundem exortum. C. B. P. 490.

7. Asparagus (*Declinatus*) caule inermi ramis declinatis foliis ſetaceis. Prod. Leyd. 29. *Aſparagus with a ſmooth ſtalk, declining branches, and briſtly leaves.*

8. Asparagus (*Aſiaticus*) aculeis ſolitariis caule erecto foliis faſciculatis, ramis filiformibus. Lin. Sp. Plant. 313. *Aſparagus with ſingle ſpines, an upright ſtalk, leaves growing in cluſters, and very ſlender branches.*

9. Asparagus (*Capenſis*) ſpinis lateralibus terminalibuſque, ramis aggregatis foliis faſciculatis. Lin. Sp. Plant. 314. *Aſparagus with ſpines growing on the ſides and ends of the branches, which are in bunches, and leaves coming out in cluſters.*

10. Asparagus (*Sarmentoſus*) foliis ſolitariis lineari lanceolatis caule flexuoſo aculeis recurvis. Flor. Zeyl. 124. *Aſparagus with ſingle, narrow, ſpear-ſhaped leaves, a flexible ſtalk, and recurved ſpines.* Aſparagus aculeatus Zeylanicus maximus ſarmentoſus. H. L. 62.

The firſt ſort is the common Aſparagus, which is cultivated for the uſe of the table, and may have probably been brought by culture to the perfection it now is, from the wild ſort, which grows naturally in the fens of Lincolnſhire, where the ſhoots are no larger than ſtraws; but if ſo, it muſt have been from very long culture and good management; for a friend of mine, who procured ſome ſeeds of the wild ſort, which he cultivated with great care, in very rich ground, yet could not bring the roots to produce ſhoots more than half the ſize of the garden kind, which grew on the ſame ground; but he always found the wild ſort came up a week or ten days earlier in the ſpring, and the ſhoots were exceeding ſweet.

I have lately had ſome doubt, whether the ſort of Aſparagus which grows naturally in England, was the ſame with that mentioned by Caſper Bauhin, becauſe Tournefort and Vaillant both aſſert that they had cultivated that wild ſort in the royal garden at Paris ſeveral years, and it had never altered, therefore I procured ſpecimens of that, which I find to be extremely different from the Engliſh ſort. The leaves are much finer and ſhorter, and are produced in much larger cluſters; the branches grow much cloſer together, and the foot-ſtalks of the flowers are longer; therefore I believe it to be a diſtinct ſpecies from our wild ſort, which appears to me undoubtedly the ſame as the Garden Aſparagus.

The Garden Aſparagus is propagated by ſeeds, in the procuring of which, there ſhould be particular care to get it from a perſon of ſkill, who may be depended upon for his choice of the ſhoots, and integrity in ſupplying with his beſt ſeeds. But where a perſon is in poſſeſſion of ſome good beds of Aſparagus, it is much the beſt way to ſave it himſelf; in order to which, a ſufficient number of the faireſt buds ſhould be marked early in the ſpring, and permitted to run up for ſeeds; becauſe thoſe which run up after the ſeaſon for cutting the Aſparagus is over, are generally ſo backward, as not to ripen the ſeeds unleſs the ſummer is warm, and the autumn very favourable. In the choice of the buds to be left for ſeeds, there muſt be great regard had to their ſize and roundneſs, never leaving any that are inclinable to be flat, or that ſoon grow open headed, always chooſing the roundeſt, and ſuch as have the cloſeſt tops. But as ſeveral of theſe produce only male flowers which are barren, a greater number of buds ſhould be left, than might be neceſſary, if there could be a certainty of their being all fruitful. When the buds are left, it will be proper to thruſt a ſtick down by each, but there muſt be care had in doing this, not to injure the crown of the root. Theſe ſticks will ſerve as marks to diſtinguiſh them from the others when they are all run up. Toward the end of September the berries will be fully ripe, when the ſtalks ſhould be cut off, and the berries ſtripped into a tub, in which they may remain three weeks or a month to ſweat, by which means the outer huſks will be rotten; then fill the tub with water, and with your hands break all the huſks by ſqueezing them between your hands. Theſe huſks will all ſwim upon the water, but the ſeeds will ſink to the bottom; ſo that by pouring off the water gently, the huſks will be carried along with it, and by putting freſh water two or three times, and ſtirring your ſeed about, you will make it entirely clean: then ſpread the ſeed upon a mat or cloth, and expoſe it to the ſun and air in dry weather, until it is perfectly dry, when it may be put into a bag, and hanged up in a dry place till the beginning of February, which is the proper ſeaſon for ſowing it; at which time you muſt prepare a bed of good rich earth made very level, whereon you muſt ſow your ſeeds (but not too thick, which will cauſe the plants to be ſmall;) then tread the bed all over to bury the ſeed in the ground, and rake it over ſmooth.

The following ſummer keep the ground diligently cleared from weeds, which will greatly add to the ſtrength of the plants; and toward the latter end of October, when the haulm is quite withered, you may ſpread a little rotten dung over the ſurface of the ground, about two inches thick, which will preſerve the young buds from being hurt with the froſts, &c.

The ſpring following the plants will be fit to plant out for good (for plants of more than one year's growth are unfit to remove, as I have often experienced; for young plants are much better than old, and will produce finer roots:) you muſt therefore prepare your ground by trenching it well, burying therein a good quantity of rotten dung at the bottom of each trench, that it may lie at leaſt ſix inches below the ſurface of the ground; then level the whole plot very exactly, taking out all large ſtones: but this ſhould not be done long before you intend to plant your Aſparagus, in which you muſt be governed according to the nature of your ſoil or the ſeaſon; for if your ſoil is dry and the ſeaſon forward, you may plant early in March; but in a wet ſoil, it is better to wait till the end of that month, or the beginning of April, which is about the ſeaſon that the plants are beginning to ſhoot. I know many people have adviſed the planting of Aſparagus at Michaelmas, but this I have experienced to be very wrong; for in two different years I was obliged to tranſplant large quantities at that ſeaſon, but I had better have thrown away the plants; for upon examination in the ſpring, I found moſt of the roots were grown mouldy, and decaying, and I am ſure, not one in five of them ſucceeded, and thoſe which did were ſo weak, as not to be worth their ſtanding.

The ſeaſon being come for planting, you muſt, with a narrow pronged dung-fork, carefully fork up the roots, ſhaking them out of the earth, and ſeparating them from each other, obſerving to lay their heads even, for the more convenient planting them, which muſt be performed in this manner:

The plot of ground being levelled, you muſt begin at one ſide thereof, ranging a line very tight croſs the piece, throwing out a trench exactly ſtrait, by the line about ſix inches deep, being careful not to turn up the dung; into which trench you may lay your roots, ſpreading them with your fingers, and placing them upright againſt the back of the trench, that the buds may ſtand forward, and be about two inches below the ſurface of the ground, and at twelve inches diſtance from each other; then with a rake, draw the earth into the trench again, laying it very level, which will preſerve the roots in their right poſition; then remove the line a foot farther back, and make another trench in the like manner, laying therein your plants as before directed, and continuing the ſame diſtance row from row, only obſerving between every four rows, to leave a diſtance of two feet four inches for an alley to go between the beds to cut the Aſparagus, &c.

The plot of ground being finiſhed and levelled, you may ſow thereon a ſmall crop of Onions, which will not hurt the Aſparagus, provided the Onions are not too cloſe, and tread in the ſeeds, raking the ground level.

There are ſome perſons who plant the ſeeds of Aſparagus in the place where the roots are to remain, which is a very good method, if it is performed with care. The way is this: after the ground has been well trenched and dunged, they lay it level, and draw a line croſs the ground (in the ſame manner as is practiſed for planting of the young plants;) then with a dibble make holes at a foot diſtance, into each of which they drop two ſeeds, for fear one ſhould miſcarry; theſe holes ſhould not be more than half an inch deep; then cover the ſeeds, by ſtriking the earth in upon it, and go on removing the line a foot back for another row; and after four rows are finiſhed, leave a ſpace for an alley between the beds, if it is deſigned to ſtand for the natural ſeaſon of cutting; but if it is to be taken up for hot-beds, there may be ſix rows planted in each bed, and the diſtance in the rows need not be more than nine inches. This ſhould be performed by the middle of February, becauſe the ſeeds lie long in the ground; but if Onions are intended to be ſown upon the ground, that may be performed a fortnight or three weeks after, provided the ground is not ſtirred ſo deep as to diſturb the Aſparagus-ſeeds, in raking the Onion-ſeeds into the ground.

As the roots of Aſparagus always ſend forth many long fibres which run deep into the ground, ſo when the ſeeds are ſown where they are to remain, the roots will not be broken or injured, as thoſe muſt be which are tranſplanted; therefore will ſhoot deeper into the ground, and make much greater progreſs, and the fibres will puſh out on every ſide, which will cauſe the crown of the root to be in the center; whereas in tranſplanting, the roots are made flat againſt the ſide of the trench.

When the Aſparagus is come up, and the Onions have raiſed their ſeed-leaves upright (which will be in ſix weeks after planting) you muſt with a ſmall hoe cut up all the weeds, and thin the crop of Onions where they may have come up in bunches: but this muſt be done carefully, and in dry weather, that the weeds may die as faſt as they are cut up, being careful not to injure the young ſhoots of Aſparagus, as alſo to cut up the Onions which grow near the ſhoots. This work muſt be repeated about three times, which, if well done, and the ſeaſon not too wet, will keep the ground clear from weeds until the Onions are fit to be pulled up, which is commonly in Auguſt, and is known when their greens fall down and begin to wither. When you have drawn off the Onions, it will be neceſſary to clean the ground well from weeds, which will keep it clean till the alleys are dug to earth the beds, which muſt be done in October, when the haulm is decayed; for if you cut off the haulm while green, the roots will ſhoot freſh again, which will greatly weaken them. This young haulm ſhould be cut off with a knife, leaving the ſtems two inches above ground, which will be a guide for you to diſtinguiſh the beds from the alleys; then with a hoe clear off the weeds into the alleys, and dig up the alleys, burying the weeds in the bottom, and throw the earth upon the beds, ſo that the beds may be about four or five inches above the level of the alleys: then a row of Coleworts may be planted in the middle of the alleys, but never ſow or plant any thing upon the beds, which would greatly weaken the roots; nor would I ever adviſe the planting of Beans in the alleys, as is the practice of many; for that greatly damages the two outſide rows of Aſparagus. In this manner it muſt remain till ſpring, when ſome time in March, the beds ſhould be hoed over, to deſtroy all young weeds; then rake them ſmooth, and obſerve all the ſucceeding ſummer to keep them clear from weeds, and in October dig up the alleys again, as was before directed, earthing the beds, &c.

The ſecond ſpring after planting, ſome perſons begin to cut ſome of the buds of Aſparagus for uſe, though it would be much better to ſtay until the third year; therefore now the beds ſhould be forked with a flat-pronged fork made on purpoſe, which is commonly called an Aſparagus-fork: this muſt be done before the buds begin to ſhoot in the ſpring, and ſhould be performed with care, leſt you fork too deep, and bruiſe the head of the root; then rake the beds over ſmooth, juſt before the buds appear above ground, which will deſtroy all young weeds, and keep your beds clean much longer than if left unraked, or if done ſo ſoon as forked. When the buds appear about four inches above ground, you may then cut them; but it ſhould be done ſparingly, only taking the large buds, and ſuffering the ſmall to run up to ſtrengthen the roots; for the more you cut, the greater will be the increaſe of buds, but they will be ſmaller and the roots ſooner decay. In cutting the buds, you muſt open the ground with your knife (which ſhould be very narrow-pointed, and long in the blade, and filed with teeth like a ſaw) to ſee whether any more young buds are coming up cloſe by it, which might be either broken or bruiſed in cutting the other, then with the knife ſaw it off about two inches under ground. This may appear a very troubleſome affair to people unacquainted with the practical part, but thoſe who are employed in cutting Aſparagus, will perform a great deal of this work in a ſhort time; but care in doing it is abſolutely neceſſary to be obſerved by all who cut Aſparagus.

The manner of dreſſing the Aſparagus-beds is every year the ſame as directed for the ſecond, viz. keeping them clean from weeds in ſummer, digging the alleys in October, and forking the beds toward the end of March, &c. only obſerve every other year to lay ſome rotten dung (from a Melon or Cucumber-bed) all over the beds, burying ſome in the alleys alſo, at the time for digging them up. This will preſerve the ground in heart to maintain the roots in vigour, and by this management, a plot of good Aſparagus may be continued for ten or twelve years in cutting, and will produce good buds, eſpecially if it is not cut too long each ſeaſon; for when it is not left to run up pretty early in June, the roots will be greatly weakened, and the buds will be ſmaller: therefore, in thoſe families where Aſparagus is required late in the ſeaſon, a few beds ſhould be ſet apart for that purpoſe, which will be much better than to injure the whole plantation, by cutting it too long.

I cannot help taking notice of a common error that has long prevailed with many people, which is, that of not dunging the ground for Aſparagus, believing that the dung communicates a ſtrong rank taſte to the Aſparagus, which is a great miſtake, for the ſweeteſt Aſparagus is that which grows upon the richeſt ground; for poor land occaſions that rank taſte ſo often complained of, the ſweetneſs of Aſparagus being occaſioned by the quickneſs of its growth, which is always proportionable to the goodneſs of the ground, and the warmth of the ſeaſons. In order to prove this, I planted two beds of Aſparagus, upon ground which had dung laid a foot thick; and theſe beds were every year dunged extremely thick, and the Aſparagus produced from theſe beds was much ſweeter than any I could procure, though they were boiled together in the ſame water.

The quantity of ground neceſſary to be planted with Aſparagus, to ſupply a ſmall family, ſhould be at leaſt eight rods, leſs than that will not do; for if you cannot cut one hundred at a time, it will ſcarcely be worth while, for you muſt be obliged to keep it after it is cut two or three days, eſpecially in cold ſeaſons, to furniſh enough for one meſs; but for a larger family, ſixteen rods of ground ſhould be planted, which, if a good crop, will furniſh two or three hundred each day in the height of the ſeaſon.

But as there are ſeveral people who delight in having early Aſparagus, which is become a very great trade in the kitchen-gardens near London, I ſhall give proper directions for the obtaining it any time in winter.

You muſt firſt be provided with a quantity of good roots (either of your own raiſing, or purchaſed from ſuch

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ſuch gardeners as plant for ſale,) ſuch as have been two or three years planted out from the ſeed-bed; and having fixed upon the time you would willingly have your Aſparagus fit to cut, about ſix weeks before, you ſhould prepare a quantity of new ſtable horſe-dung, which ſhould be thrown in a heap for ten days or more, to ferment, mixing ſome ſea-coal aſhes with it; then it ſhould be turned over into a heap, where it muſt lie another week, when it will be fit for uſe. Then dig out a trench in the ground where you intend to make the bed, the width of the frames that are deſigned to cover it, and the length in proportion to the quantity you intend to have (which if deſigned only to ſupply a ſmall family, three or four lights at a time will be ſufficient,) but for a larger family, ſix or eight lights will not be too much: then lay down your dung into the trench, working it very regularly, and beat it down very tight with a fork, laying it at leaſt three feet in thickneſs or more, when the beds are made in December; then put your earth thereon about ſix inches thick, breaking the clods and laying it level; and at one end, begin laying your roots againſt a little ridge of earth, raiſed about four inches high: your roots muſt be laid as cloſe as poſſible one to the other, in rows, with their buds ſtanding upright; and between every row lay a ſmall quantity of fine mould, obſerving to keep the crown of the roots exactly level. When you have finiſhed laying your bed with roots, you muſt lay ſome ſtiff earth up to the roots, on the outſides of the bed, which are bare, to keep them from drying; and thruſt two or three ſharp-pointed ſticks, about two feet long, down between the roots, in the middle of the bed, at a diſtance from each other. The uſe of theſe ſticks is to inform you what temper of heat the bed is in, which you may find by drawing up the ſticks, and feeling the lower part; and if, after the bed has been made a week, you find it doth not heat, you may lay a little ſtraw or litter round the ſides, and alſo upon the top, which will greatly help it; or if you find it very hot, ſo as to endanger ſcorching of the roots, it will be adviſable to let it remain wholly uncovered, and to thruſt a large ſtick into the dung, on each ſide of the bed, in two or three places, to make holes for the great ſteam of the bed to paſs off, which in a ſhort time will reduce the bed to a moderate heat.

After the bed has been made a fortnight, you muſt cover the crowns of the roots with fine earth, about two inches thick; and when the buds begin to appear above ground through that earth, you muſt again lay on a freſh quantity, about three inches thick; ſo that in the whole, it may be five inches above the crowns of the root, which will be ſufficient.

Then you muſt make a band of ſtraw (or long litter,) about four inches thick, which muſt be faſtened round the ſides of the bed, that the upper part may be level with the ſurface of the ground: this muſt be faſtened with ſtrait ſticks about two feet long, ſharpened at the points, to run into the bed; and upon this band you muſt ſet your frames, and put your glaſſes thereon; but if, after your bed hath been made three weeks, you find the heat decline, you muſt lay a good lining of freſh hot dung round the ſides of the bed, which will add a freſh heat thereto; and in bad weather, as alſo every night, keep the glaſſes covered with mats and ſtraw; but in the day time, let it be all taken off, eſpecially whenever the ſun appears; which, ſhining through the glaſſes, will give a good colour to the Aſparagus.

A bed thus made, if it works kindly, will begin to produce buds for cutting, in about five or ſix weeks, and will hold about three weeks in cutting; which, if rightly planted with good roots, will produce, in that time, about three hundred buds in each light; ſo that where Aſparagus is propoſed to be continued until the ſeaſon of the natural being produced, a freſh bed ſhould be made every three weeks, until the beginning of March, from the time of the firſt bed being made; for if the laſt bed is made about a week in March, it will laſt till the ſeaſon of natural Aſparagus; for the laſt beds will come a fortnight ſooner to cut after making, than thoſe made about Chriſtmas; and the buds will be larger, and better coloured, as they will then enjoy a greater ſhare of the ſun.

Where this method of forcing early Aſparagus is intended, there ſhould be every year ſuch a quantity planted, which you ſhall judge neceſſary (unleſs you intend to buy the roots from ſome other garden;) the quantity of roots neceſſary to plant one light, is commonly known by the meaſure of the ground where they grow; for where there is a good crop, and few roots are miſſing, one rod of ground will furniſh enough for a light; but this calculation is made from the ground planted with roots, which are deſigned to be taken up after two or three years growth for forcing, in which there are ſix rows in a bed, at but ten inches diſtance, and the plants eight or nine inches aſunder in the rows; but where there is a greater ſpace between the rows, and fewer rows in a bed, then there muſt be a greater quantity of ground allotted for each light. Moſt of the kitchen-gardeners about London, take up their Aſparagus roots after two years growth from planting; but where the land is not very good, it will be better to let it have three years growth, for if the roots are weak, the buds of Aſparagus will be very ſmall, ſo not worth the trouble of forcing. The beſt ground for planting Aſparagus, to have large roots for hot-beds, is a moiſt rich ſoil; but for thoſe that are to remain for a natural produce, a middling ſoil, neither too wet nor too dry; but a freſh ſandy loam, when well dunged, is preferable to any other.

The ſecond ſort is mentioned to grow naturally in Wales, and alſo near Briſtol: I have received ſeeds from the iſland of Portland, which have ſucceeded in the Chelſea garden, by which I am convinced it is a different ſpecies from the Garden Aſparagus; and alſo from the wild ſort which grows naturally at Gibraltar, and alſo near Montpelier, is different from both; Mr. Magnol, of Montpelier, was alſo of the opinion that it was a different ſpecies, for he ſays, the common wild Aſparagus and this grew near each other in the neighbourhood of Montpelier, and the young ſhoots of the former were ſweet, whereas thoſe of the latter were bitter. The ſame has been confirmed to me by ſeveral gentlemen, who have reſided many years at Gibraltar and Minorca, where the ſecond ſort grows naturally in plenty.

This ſort is propagated by ſeeds in the ſame manner as the garden kind, but muſt have a warmer ſituation; and the roots ſhould be well covered in winter, to prevent the froſt from penetrating the ground, which will deſtroy it.

The third ſort hath white, crooked, ſhrubby ſtalks, which riſe four or five feet high, but have no ſpines on them; the leaves come out in cluſters from the ſame point, like thoſe of the Larch-tree; theſe are very ſhort, and end in ſharp prickles, ſo that they are troubleſome to handle. This ſort grows naturally in the South of France, Spain, and Portugal. It is propagated by ſeeds as the former ſorts, but is too tender to live abroad in England, ſo the roots ſhould be planted in pots, or near a ſouth wall, and ſheltered in winter.

The fourth ſort grows with ſhrubby ſtalks three or four feet high, with very white bark, and are armed with thorns which are ſingle, coming out juſt below each turf of leaves. Theſe ſtalks continue ſeveral years, and put out many branches, garniſhed with narrow ſhort leaves. Theſe continue green all the winter, if the plants are ſcreened from ſevere froſt.

It is propagated by ſeeds as the former, which may be procured from the Mediterranean, where it grows naturally; ſome of the plants ſhould be kept in pots, that they may be ſheltered in winter, and the others may be planted in the full ground in a warm ſituation, and in hard froſts covered, otherwiſe it will not live abroad in this country.

The fifth ſort grows naturally at the Cape of Good Hope. This hath very crooked irregular ſtalks, which are

are ſhrubby, and riſe eight or ten feet high, putting out ſeveral weak ſide branches, garniſhed with long narrow leaves, coming out in cluſters like thoſe of the Larch-tree; under each of theſe cluſters is placed a ſingle ſharp thorn. The ſtalks continue ſeveral years, and the leaves keep green all the winter. This is commonly propagated by parting the roots, becauſe the plants rarely produce ſeeds in this country; the beſt time for this is in April. The roots muſt be planted in pots, and removed into the green-houſe in the autumn, for theſe plants will not live abroad in England.

The ſixth ſort grows naturally in Spain, Portugal, and Sicily, generally in rocky places. This ſends up many weak irregular ſhoots, which have no leaves, but inſtead thereof, are armed with ſhort ſtiff thorns, which come out four or five together from the ſame point, and ſpread from each other every way. The flowers are ſmall, of an herbaceous colour; the berries are larger than thoſe of the common ſort, and are black when ripe. This is tender, ſo muſt be treated as the third ſort.

The ſeventh ſort grows naturally at the Cape of Good Hope. This ſends up from the root ſeveral ſlender ſtalks, which put out weak branches, declining downward; theſe are cloſely garniſhed with briſtly leaves, like thoſe of Garden Aſparagus, which continue green through the year. It hath not produced any ſeeds in England, ſo is only propagated by parting the roots, as the fifth ſort, and the plants ſhould be treated in the ſame manner.

The eighth ſort grows naturally at the Cape of Good Hope; this ſends up many weak ſhoots growing in cluſters, which are armed with ſharp ſpines, both on the ſide and ends of the ſhoots; the leaves come out in ſmall cluſters, which continue green all the year. This doth not produce ſeeds in England, ſo is propagated as the fifth ſort, and requires the ſame treatment.

The tenth ſort ſends out from the root many weak climbing branches which riſe five or ſix feet high, garniſhed with narrow ſpear-ſhaped leaves coming out ſingle; the ſhoots are armed with ſhort crooked ſpines, which render it very troubleſome to handle the plants; for they are ſo cloſely ſet on, that it is difficult to touch the branches. This is propagated by parting the root; but the plants muſt be placed in a moderate ſtove, otherwiſe it will not thrive in this country. It grows naturally in the iſland of Ceylon.

Theſe plants are preſerved in the gardens of the curious, where they add to the variety; being not difficult to manage, where there is conveniency to houſe them in winter. They ſhould have a place among other exotic plants.

ASPARAGUS SCANDENS. See MEDEOLA.

ASPEN-TREE. See POPULUS.

ASPERIFOLIOUS plants [aſperifolius, of aſper, rough, and folium, *Lat.* a leaf] are ſuch plants as are rough-leaved, having their leaves placed alternately, or without any certain order, on their ſtalks: the claſs of plants ſo denominated by Mr. Ray, have a monopetalous flower, cut or divided into five parts; after every flower there ſucceed commonly four ſeeds. Of this claſs are Bugloſs, Borage, Comfrey, Hounds Tongue, &c.

ASPERUGO, ſmall Wild Bugloſs.

The CHARACTERS are,

The empalement is of one leaf, cut ſlightly at the top into five equal parts; the flower is of one leaf, having a ſhort cylindrical tube, cut at the top into five ſmall blunt parts, which are cloſed at their baſe: it hath five ſhort ſtamina, crowned by oblong ſummits; in the center there are four compreſſed germen, ſupporting a ſhort ſlender ſtyle, crowned by a blunt ſtigma. The germen afterward become four oblong ſeeds, incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, entitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

We know but one SPECIES of this genus, which is,

ASPERUGO. Flor. Lapp. 76. *Small Wild Bugloſs, Great Gooſe Graſs, or German Madwort.* Bugloſſum ſylveſtre, caulibus procumbentibus. C. B. P. 257.

This is an annual plant, which is found wild in ſome parts of England, as near Newmarket, at Boxley in Suſſex, and in Holy Iſland. It is preſerved in botanic gardens for variety, and may be eaſily propagated by ſeeds, which ſhould be ſown in autumn; for if the ſeeds are kept out of the ground till ſpring, they do not ſucceed ſo well. When the plants come up, they require no other culture but to keep them clear from weeds, and in May they will flower: in June their ſeeds will be perfected, which, if ſuffered to ſcatter, will grow again in autumn; ſo that when this plant is once brought into a garden, it will maintain itſelf, provided it be allowed a place.

ASPERULA, Woodroof.

This plant grows wild in ſhady woods in many parts of England, and flowers in April or May, and is ſometimes uſed in medicine.

Dr. Linnæus has joined to this genus the Gallium album, Gallium montanum, and Rubia ſynanchica Saxatilis. C. B. But as theſe grow wild in England, and are rarely admitted into gardens, I ſhall paſs them over with juſt mentioning them.

ASPHODELUS [Ἀσφόδελος, *Gr.* by Pliny it is called Haſtula, or Baccillus Regius, becauſe when it flowers, the ſtalk reſembles a royal ſcepter.] King's Spear.

The CHARACTERS are,

The flower has no empalement; it is of one leaf, cut into ſix parts, which ſpread open; at the bottom is inſerted a globular nectarium, having ſix valves; it hath ſix awl-ſhaped ſtamina, which are inſerted in the valves of the nectarium, and are crowned by oblong ſummits, which are proſtrate, and turn upward; between the nectarium is placed a globular germen, ſupporting an awl-ſhaped ſtyle, crowned by a club-like ſtigma: the empalement afterward becomes a fleſhy globular ſeed-veſſel, having three cells, which are filled with triangular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, entitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. ASPHODELUS (*Luteus*) caule folioſo, foliis triquetris fiſtuloſis. Hort. Cliff. 127. *King's Spear with a leafy ſtalk, and triangular fiſtular leaves.* Aſphodelus luteus & flore & radice. C. B. P. 28.
2. ASPHODELUS (*Ramoſus*) caule nudo foliis enſiformibus carinatis lævibus. Lin. Mat. Med. 172. *King's Spear with a naked branching ſtalk, and ſmooth, ſword-ſhaped, carinated leaves.* Aſphodelus albus ramoſus mas. C. B. P. 28.
3. ASPHODELUS (*Albus*) caule nudo ſimplici foliis lineari-enſiformibus. *King's Spear with a ſingle naked ſtalk, and narrow ſword-ſhaped leaves.* Aſphodelus albus non ramoſus. C. B. P. 28.
4. ASPHODELUS (*Fiſtuloſus*) caule nudo foliis ſtrictis ſubulatis ſtriatis ſubfiſtuloſis. Hort. Cliff. 83. *King's Spear with a naked ſtalk, fiſtular awl-ſhaped leaves, and an annual root.* Phalangium parvo flore ramoſum foliis fiſtuloſis annuum. H. L.

The firſt ſort is the yellow Aſphodel, which is directed for uſe in medicine; this hath roots compoſed of many thick, fleſhy, yellow fibres, joined into a head at the top; from whence ariſe ſtrong, round, ſingle ſtalks, near three feet high, garniſhed their whole length with long triangular leaves, which are boat-ſhaped, of a ſea-green colour; the upper part of the ſtalk is adorned half way with yellow ſtar-ſhaped flowers, which begin opening from the bottom, and are followed by others above; ſo that on the ſame ſpike, there is often a ſucceſſion of flowers for a month. It flowers in June, and the ſeeds ripen in autumn.

There is a variety of this with a larger flower, mentioned in the catalogue of the Royal Garden at Paris, by the title of Aſphodelus ſpiralis luteus Italicus magno flore, the ſeeds of which I received from the garden at Piſa, ſome years ago; and the firſt year of the plants flowering in Chelſea garden, the flowers were larger, and the ſpikes longer than thoſe of the

common ſort; but in two years time, they were ſo like the common ſort as not to be diſtinguiſhed from it, as were alſo the young plants which were raiſed from the ſeed ſaved at Chelſea, therefore it ſhould be eſteemed an accidental variety.

The ſecond ſort hath roots compoſed of many thick fleſhy fibres; to each of which is faſtened an oblong tuber, as large as ſmall potatoes; the leaves are long and flexible, having acute edges; theſe grow in irregular cluſters, from the crown of the root; between theſe come out the ſtalks, which riſe more than three feet high, ſending out ſeveral ſide branches, which are naked; the upper part of theſe are adorned with many white ſtar-ſhaped flowers, conſiſting of one leaf cut into ſix parts, each having a purple line running lengthways on the outſide of each ſegment. The flowers grow in long ſpikes, flowering gradually upward. They appear the beginning of June, and the ſeeds ripen in autumn.

The third ſort hath roots like the ſecond, but the leaves are longer and narrower; the ſtalks of this are ſingle, never putting out any ſide branches; the flowers are of a purer white, and grow in longer ſpikes. This flowers at the ſame time with the former.

The fourth ſort is an annual plant; the roots of this are compoſed of many fleſhy yellow fibres, the leaves are ſpread out from the crown of the root, cloſe to the ground, in a large cluſter; they are convex on their under ſide, but plain above, and hollow like a pipe; the flower-ſtalks riſe immediately from the root, and grow about two feet high, dividing into three or four branches upward, which are adorned with white ſtarry flowers, with purple lines on the outſide. Theſe flower in July and Auguſt, and their ſeeds ripen in October, ſoon after which the Plants decay. It grows naturally in the ſouth of France, Spain, and Italy.

The firſt ſort grows naturally in many of the iſlands of the Archipelago, and alſo in Sicily. The ſecond, third, and fourth ſorts grow naturally in Portugal, Spain, and Italy; the third ſort is not quite ſo hardy as either of the other, ſo in very ſevere froſt is ſometimes killed, unleſs the roots are covered in winter.

The yellow ſort multiplies very faſt by roots, and will ſoon overſpread a large border, if ſuffered to remain unremoved, or the ſide roots are not taken off; but the other ſorts are not ſo productive of ſhoots from their ſides, and are much better kept within bounds.

The ſecond and third ſorts do not increaſe very faſt by their roots, nor ſhould they be often tranſplanted, for that will weaken them, ſo that their flower-ſtems will not riſe ſo tall, or produce ſo many flowers, as when they are left undiſturbed for ſome years; therefore the beſt way is to propagate theſe by ſeeds.

Theſe three ſorts of Aſphodel are very pretty ornaments for a flower-garden, and, requiring very little trouble to cultivate them, are rendered more acceptable. They may be all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, on a warm border of light freſh earth: in the ſpring the plants will appear, when you ſhould carefully clear them from weeds, and in dry weather they muſt be frequently watered: if this be duly obſerved, the plants will have acquired ſtrength enough to be tranſplanted by the Michaelmas following; at which time you muſt prepare a bed of freſh earth in the flower nurſery, into which you ſhould plant the roots, at about ſix inches diſtance every way; obſerving to plant them ſo low, as that the top of the roots may be three or four inches under the ſurface of the bed; and ſome old tan, or dung, ſhould be ſpread over the furface of the ground, to keep out the froſt: in this bed they may remain one year, during which time they ſhould be kept clear from weeds; by which time, the roots having acquired ſtrength enough to produce flowers the following year, they ſhould, in autumn, when their leaves are decayed, be carefully taken up, and tranſplanted into the flower-garden, obſerving to place them in the middle of the borders, amongſt

other hardy kinds of flowers, where being properly intermixed, they will make an agreeable variety, and continue a long time in flower.

The fourth ſort is an annual plant, ſo is only propagated by ſeeds; theſe ſhould be ſown in the autumn, when they will more certainly grow than if ſown in the ſpring: when the plants are up, they will require no other trouble but to keep them clean from weeds, until they have put out four or five leaves, when they ſhould be carefully removed to the places where they are to remain for good. If the ſeeds of this plant are permitted to ſcatter, the plants will come up without care, and thoſe which are not removed, will be the ſtrongeſt plants, and produce a greater number of flowers.

ASPLENIUM, or Ceterach [is ſo called from ἀ privative, and σπλὴν the ſpleen, becauſe good againſt diſeaſes of the ſpleen.] Spleenwort or Miltwaſte.

The CHARACTERS are,

The leaves are like thoſe of the Polypody, but leſs, and pretty round, notched toward the ſide; downy on their under ſide, having a ſquamous duſt, in which, by the help of a microſcope, membranous capſulæ, or ſeed pods, lying cloſe to one another, are perceived, every one furniſhed with a little round cord, which by its conſtruction opening the fruit into two parts, pours forth certain very ſmall ſeeds: the root is fibrous. This plant thrives in ſtony places, as in walls, &c.

This plant is of the Fern kind, and grows upon old moiſt ſhady walls in divers parts of England; but is never cultivated in gardens. There are ſeveral ſpecies of this plant in America, but they have not been introduced into England.

ASTER [Ἀστὴρ, *Gr.* a Star; ſo called becauſe the flower is radiated with little leaves after the manner of a ſtar.] Starwort.

The CHARACTERS are,

It hath a compound flower, compoſed of ſeveral female and hermaphrodite florets, included in one common ſcaly empalement; the rays or border of the flower is compoſed of ſeveral female florets, whoſe upper parts are ſtretched out on one ſide like a tongue, and indented in three ſegments at the end; the hermaphrodite florets form the diſk or middle; which are funnel-ſhaped, and divided at the top into five parts, ſpreading open, and have each five ſhort ſlender ſtamina, crowned with cylindrical ſummits; in the bottom is placed a crowned germen, ſupporting a ſlender ſtyle, crowned by a biſid ſtigma; the germen afterward becomes an oblong ſeed, crowned with down: the female flowers have a germen ſupporting a ſlender ſtyle, crowned by two oblong ſtigma, which turn backward. Theſe have no ſtamina, but in other reſpects are like the hermaphrodite flowers.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, from the ſame flower having female and hermaphrodite florets included in the ſame empalement.

The SPECIES are,

1. ASTER (*Alpinus*) foliis lanceolatis hirtis, radicalibus obtuſis, caule ſimpliciſſimo unifloro. Lin. Sp. Plant. 872. *Starwort with hairy ſpear-ſhaped leaves, thoſe at the root blunt, and a ſingle ſtalk, having one flower.* After montanus cæruleus magno flore foliis oblongis. C. B. P. 267.
2. ASTER (*Amellus*) foliis lanceolatis obtuſis ſcabris trinerviis integris, pedunculis nudiuſculis corymboſis ſquamis calycinis obtuſis. Lin. Sp. Plant. 873. *Starwort with rough, blunt, ſpear-ſhaped leaves, which are entire, having three veins, naked foot-ſtalks, flowers in a corymbus, and blunt ſcales to the empalement.* After aticus cæruleus vulgaris. C. B. P. 267. *vulgarly called Italian Starwort.*
3. ASTER (*Tripolium*) foliis lanceolatis integerrimis carnoſis glabris ramis inæquatis, floribus corymboſis. Lin. Sp. Plant. 872. *Starwort with ſmooth, fleſhy, ſpear-ſhaped leaves, which are entire, unequal branches, and flowers in a corymbus.* After maritimus Tripolium dictus. Raii Hiſt. 270.
4. ASTER (*Linifolius*) foliis linearibus acutis integerrimis, caule corymboſo ramoſiſſimo. Hort. Cliff. 408. *Star-*

wort with narrow pointed leaves, which are entire, and a very branchy ſtalk growing in a corymbus. After Tripolii flore anguſtiſſimo & tenuiſſimo folio. Mor. Hiſt. 3. 121.

5. ASTER (*Novæ Angliæ*) foliis lanceolatis alternis integerrimis ſemiamplexicaulibus, floribus terminalibus. Hort. Cliff. 408. *Starwort with entire ſpear-ſhaped leaves, growing alternate, and half embracing the ſtalks, which are terminated by flowers.* After Novæ Angliæ altiſſimus hirſutus floribus amplis purpuro-violaceis. Par. bat. 98.

6. ASTER (*Undulatus*) foliis cordatis amplexicaulibus undulatis ſubtus tomentoſis, floribus racemoſis adſcendentibus. Hort. Cliff. 408. *Starwort with heart-ſpear-ſhaped waved leaves, woolly on their underſide, and flowers growing in aſcending ſpikes.* After novæ Angliæ purpureus Virgæ aureæ facie & foliis undulatis. Par. bat. 96.

7. ASTER (*Puniceus*) foliis ſemiamplexicaulibus lanceolatis ſerratis ſcabris, pedunculis alternis ſubunifloris calycibus diſcum ſuperantibus. Hort. Cliff. 408. *Starwort with rough, ſawed, ſpear-ſhaped leaves, half embracing the ſtalks, foot-ſtalks growing alternate, with a ſingle flower on each foot-ſtalk, whoſe empalement is higher than the diſk.* After Americanus latifolius puniceis caulibus. H. L. 649.

8. ASTER (*Miſer*) floribus ovatis diſco radiis longiore. Lin. Sp. Plant. 877. *Starwort with oval flowers, whoſe diſk is longer than the rays.* After ericoides Mellioti agriæ umbone. Hort. Elth. 40.

9. ASTER (*Novi Belgii*) foliis lanceolatis ſubſerratis ſeſſilibus caule paniculato ramulis unifloris ſolitariis calycibus ſquarroſis. Hort. Cliff. 408. *Starwort with ſpear-ſhaped jagged leaves, growing cloſe to the ſtalk, which is looſe and ſpiked, and branches having a ſingle flower with a rough empalement.* After Novæ Belgiæ latifolius umbellatus floribus dilutè violaceis. H. L. 66.

10. ASTER (*Linarifolius*) foliis lanceolato-linearibus ſubcarnoſis integerrimis planis floribus corymboſis faſtigatis pedunculis folioloſis. Lin. Sp. Plant. 874. *Starwort with narrow, ſpear-ſhaped, fleſhy leaves, which are plain and entire, flowers gathered into a corymbus, and leafy foot-ſtalks.* After Tripolii flore. C. B. P. 267.

11. ASTER (*Concolor*) caule ſimpliciſſimo foliis oblongo-ovatis ſeſſilibus integerrimis racemo terminali. Flor. Virg. 178. *Starwort with ſingle ſtalks, oval entire leaves growing cloſe to the ſtalks, which end in a looſe ſpike.*

12. ASTER (*Ericoides*) foliis linearibus integerrimis, caule paniculato, pedunculis racemoſis, pedicellis folioſis. Flor. Virg. 124. *Starwort with linear leaves, a paniculated ſtalk with branching leafy foot-ſtalks.* After ericoides dumoſus. Hort. Elth. 40.

13. ASTER (*Cordifolia*) foliis cordatis ſerratis petiolatis, caule paniculato. Hort. Cliff. 408. *Starwort with ſawed heart-ſhaped leaves, having foot-ſtalks, and a looſe ſpiked ſtalk.* After latifolius autumnalis. Cornut. Canad. 64.

14. ASTER (*Tenuifolius*) foliis ſub linearibus integerrimus pedunculis folioſis. Lin. Sp. 1227. *Starwort with narrow ſpear-ſhaped entire leaves, and leafy foot-ſtalks.* After Americanus Belvidere foliis floribus ex cæruleo albicantibus ſpicis prælongis. Pluk. Phyt. tab. 78. f. 5.

15. ASTER (*Grandiflorus*) caule corymboſo foliis lanceolatis reflexis, floribus ſolitaris, calycibus ſquarroſis. Flor. Leyd. 168. *Starwort with a corymbous ſtalk, ſpear-ſhaped, reflected leaves, and ſingle flowers with rough empalements.* After Virginianus pyramidatus Hyſſopi folius aſperis calycis ſquamulis foliaceis. Mart. Cent. 19.

16. ASTER (*Scabris*) foliis lanceolatis ſcabris integris, caule ramoſo, pedunculis folioſis, calycibus obtuſis. *Starwort with rough ſpear-ſhaped entire leaves, and a branching ſtalk, with leafy foot-ſtalks.* After Atticus Alpinus alter. C. B. P. 267.

17. ASTER (*Glabris*) foliis olongo-lanceolatis acutis ſerratis caule ramoſo floribus terminalibus calycibus linearibus erectis. *Starwort with oblong, ſpear-ſhaped, pointed ſawed leaves, and a branching ſtalk, terminated by flowers, whoſe empalements are very narrow, and erect.* After Perſicæ foliis ſerratis glabris, floribus ſparſis pallidè cæruleis. Dillen. Cat. Oxon.

18. ASTER (*Tradeſcanti*) foliis oblongis acutis baſi latioribus ſemiamplexicaulibus, caule ramoſo floribus terminalibus plerumque ſolitariis. *Starwort with oblong pointed leaves, broad at their baſe, half embracing the ſtalks, which are branchy, and terminated with flowers, for the moſt part ſingly.* After cæruleus ſerotinus fruticeſcens Tradeſcanti. Raii Hiſt. 269. *commonly called Michaelmas Daiſy.*

19. ASTER (*Præcox*) caule erecto hirſuto foliis oblongis acutis ſcabris acutè dentatis ſemiamplexicaulibus floribus corymboſis, calycibus hirſutis erectis. *Starwort with a hairy upright ſtalk, oblong pointed rough leaves, ſharply indented, half embracing the ſtalks, and flowers in a corymbus with hairy erect empalements.* After Pyrenaicus precox flore cæruleo majori. H. R. Par.

20. ASTER (*Altiſſimus*) caule altiſſimo hirſuto ſimpliciſſimo foliis oblongis acutis baſi latioribus ſemiamplexicaulibus floribus tribus ſeſſilibus terminalibus. *Starwort with a very tall, hairy, unbranched ſtalk, oblong pointed leaves, which are broader at the baſe, and half embrace the ſtalks, which are terminated by three flowers ſitting very cloſe.*

21. ASTER (*Ramociſſimus*) caule ramociſſimo patulo, foliis lineari-lanceolatis rigidis, floribus ſerratim poſitis pedunculis folioſis. *Starwort with a very branching ſpreading ſtalk, narrow, ſpear-ſhaped, ſtiff leaves, flowers placed one above another, and leafy foot-ſtalks.*

22. ASTER (*Umbellatus*) foliis lanceolatis acutis ſcabris, caule ſimplici floribus umbellatis terminalibus. *Starwort with rough pointed ſpear-ſhaped leaves, and a ſingle ſtalk, terminated by flowers, growing in an umbel.*

23. ASTER (*Nervoſus*) foliis nervoſis lanceolatis acutis linearibus caule ſimplici floribus terminalibus quaſi umbellatum diſpoſitis. *Starwort with narrow, ſpear-ſhaped, pointed, nervous leaves, a ſingle ſtalk, terminated by flowers growing almoſt in an umbel.*

24. ASTER (*Paniculatus*) foliis inferioribus ovatis baſi ſemiamplexicaulibus, ſuperioribus lanceolatis parvis caule paniculato ramis unifloris pedunculis folioſis. *Starwort with the lower leaves oval, whoſe baſe half embraces the ſtalks, the upper leaves ſmall and ſpear-ſhaped, a ſtalk terminated by a looſe ſpike, with a ſingle flower on each branch, and a leafy foot-ſtalk.*

25. ASTER (*Rigidus*) floribus terminalibus ſolitariis foliis linearibus alternis. Flor. Virg. 98. *Starwort with ſingle flowers at the ends of the branches, and very narrow leaves placed alternately.*

26. ASTER (*Latifolius*) foliis lineari-lanceolatis glabris trinerviis floribus corymboſis terminalibus. *Starwort with ſmooth ſpear-ſhaped leaves, with three veins, and flowers in a corymbus, which terminate the ſtalks.* After latifolius Tripolii flore. H. R. Par.

27. ASTER (*Dumoſus*) foliis linearibus integerrimis caule paniculato. Hort. Cliff. 408. *Starwort with very narrow leaves, which are entire, and a looſe ſpike of flowers.* After Novæ Angliæ linariæ foliis Chamæmeli flore. Par. Bat. Prod. 95.

28. ASTER (*Annus*) foliis lanceolatis lateribus inferiorum crenatis, radice annuâ, caule corymboſo pedunculis nudis. Hort. Cliff. 409. *Starwort with ſpear-ſhaped leaves, the ſides of the lower leaves jagged, an annual root, and ſtalks ending with a corymbus of flowers, with naked foot-ſtalks.* After ramoſus annuus Canadenſis. Mor. Hiſt.

29. ASTER (*Fruticoſus*) foliis linearibus faſciculatis punctatis, pedunculis unifloris nudis, caule fruticoſo rugoſo. Hort. Cliff. 409. *Starwort with narrow pointed leaves growing in cluſters, naked foot-ſtalks with one flower, and a ſhrubby ſtalk.* After Africanus fruteſcens foliis anguſtis & plerumque conjunctis. Hort. Amſt. 2. p. 53.

30. ASTER (*Chinenſis*) foliis ovatis angulatis dentatis, petiolatis calycibus terminalibus patentibus folioſis. Hort. Cliff. 407. *Starwort with oval angular indented leaves, and the empalements terminated by ſpreading leaves.* After Chenepodii folio annuus, flore ingenti ſpecioſo. Hort. Elth. 38.

31. ASTER

A S T

31. ASTER (*Aurantius*) foliis pinnatis. Hort. Cliff. 407. *Starwort with winged leaves.* After Americanus foliis pinnatis & ſerratis floribus aurantis. Houſt. MSS.

32. ASTER (*Procumbens*) foliis ovatis dentatis caule procumbente, pedunculis nudis axillaribus unifloris. *Starwort with oval indented leaves, a trailing ſtalk, and naked foot-ſtalks proceeding from the ſide with a ſingle flower.* After Americanus procumbens bellidis minoris facie. Houſt. MSS.

33. ASTER (*Mutabilis*) foliis lanceolatis ſerratis, calycibus ſquarroſis, panicula ſubfaſtigiata. Lin. Sp. 1230. *Starwort with ſawed ſpear-ſhaped leaves, rough flower-cups, and bundled panicles.* After Novi Belgii latifolius paniculatus, floribus ſaturate violaceis. H. L. 65.

34. ASTER (*Sibiricus*) foliis lanceolatis venoſis ſcabris extimoſerratis, caulibus ſtriatis, pedunculis tomentoſis. Lin. Sp. 1226. *Starwort with veined ſpear-ſhaped leaves, ſtriated ſtalks, and woolly foot-ſtalks.*

35. ASTER (*Divaricatus*) ramis divaricatis, foliis ovatis ſerratis, floralibus integerrimis obtuſiuſculis amplexicaulibus. Flor. Virg. 123. *Starwort with forked branches, oval ſawed leaves, thoſe near the flowers are obtuſe, entire, and embrace the ſtalk.* After Americanus latifolius albus, caule ad ſummum brachiato. Pluk. Alm. 56.

The firſt ſort grows naturally upon the Alps, where it ſeldom riſes more than nine inches high, and when tranſplanted into a garden, not above ſixteen. It ſends up ſingle ſtalks from the root, which are thinly garniſhed with oblong leaves; at the top of each ſtalk is one large blue flower, ſomewhat like thoſe of the Italian Starwort. This flowers in June; the root is perennial, but muſt be planted in a ſhady ſituation, and a moiſt ſoil. It is propagated by parting the roots, which ſhould be done in autumn.

The ſecond ſort is the Italian Starwort, which was ſome years paſt more common in the gardens than at preſent; for ſince the great variety of American Starworts have been introduced into England, this ſort hath not been ſo much cultivated, though it is by no means inferior to the beſt of them, and, in ſome reſpects, preferable to moſt of them; for it is not ſo ſubject to creep by the root, as many of the American ſorts do, whereby they often become troubleſome in ſmall gardens, nor do the ſtalks require ſupporting as they do, for theſe ſeldom grow more than two feet high, and the ſtalks are generally ſtrong, ſo are very rarely broken by the wind. Theſe grow in large cluſters from the root, and each of them branch at the top into eight or ten foot-ſtalks, each of which is terminated by a ſingle large flower, having blue rays, with a yellow diſk. It flowers in October, and, in mild ſeaſons, will often continue till the middle of November, during which time they are very ornamental plants in a garden. This ſort is propagated by parting the roots, the beſt time for this work is ſoon after they are out of flower, for thoſe which are removed in the ſpring will not flower ſo ſtrong the ſucceeding autumn. Theſe roots ſhould not be removed oftener than every third year, where they are expected to produce many flowers.

It grows naturally in the vallies of Italy, Sicily, and Narbonne, and is generally ſuppoſed to be the Amellus mentioned by Virgil in his fourth Georgick, to grow in the paſtures; the leaves and ſtalks being rough and bitter, the cattle ſeldom browſe upon it, ſo that whenever there are any of theſe roots in the fields, they ſend up a thick tuft of ſtalks, which, being left after the graſs is eaten bare, theſe being full of flowers, make a fine appearance, and therefore might engage the poet's attention.

The third ſort grows naturally in ſalt marſhes, which are flowed by the tides, and is ſeldom admitted into gardens. It flowers in July and Auguſt.

The fourth ſort is a native in North America, but has been many years in the Engliſh gardens. It ſends up many ſtrong ſhoots from the root every ſpring, which riſe between two and three feet high, garniſhed with oblong leaves, placed alternately, and half embrace the ſtalk with their baſe; from the main ſtalks, many ſide branches are put out, for near half their length, theſe are garniſhed with ſmaller leaves, which diminiſh in their ſize to the top, where there is a ſingle flower, terminating the ſtalk, of a blue colour. This flowers in Auguſt and September; it is eaſily propagated by parting the roots, ſoon after the flowers are paſt, and will thrive in almoſt any ſoil or ſituation.

The fifth ſort ſends up many ſtalks from the root, which riſe five feet high; garniſhed with ſpear-ſhaped leaves which are entire, and half embrace the ſtalks, which are terminated by large purple violet flowers, growing in a looſe panicle: it flowers in Auguſt, and is very hardy, ſo may be planted in any ſoil or ſituation, and is propagated by parting the roots.

The ſixth ſort grows naturally in North America. This hath broad heart-ſhaped waved leaves at the bottom, the ſtalks riſe between two and three feet high, which ſend out ſmall ſide branches, upon which the flowers come out in looſe ſpikes, which are of a very pale blue colour, inclining to white. This flowers in the ſame ſeaſon as the former, and may be propagated in the ſame manner.

The ſeventh ſort ſends up ſeveral ſtrong ſtalks, upward of two feet high, which are of a purple colour, garniſhed with ſpear-ſhaped ſmooth leaves, whoſe baſe embrace the ſtalks half round; the flowers grow upon ſingle foot-ſtalks, forming a corymbus at the top, and are of a pale blue colour; theſe appear the latter end of September. This comes from North America, and may be propagated in the ſame way as the former.

The eighth ſort riſes with ſlender ſtalks, upward of three feet high; ſending out many weak branches on every ſide, garniſhed with very ſmall leaves; the flowers come out on ſhort foot-ſtalks, on every ſide of the branches, theſe are ſmall, with white rays and a yellow diſk. They appear in November, and often continue part of December. This comes from the ſame country with the former, and may be propagated as is before directed for them.

The ninth ſort riſes near four feet high, having broad leaves at the bottom which diminiſh gradually to the top; the flowers are produced in a looſe kind of umbel at the top of the ſtalks, which are of a pale blue colour; theſe appear the latter part of Auguſt. This is hardy, and may be propagated as the former.

The tenth ſort grows naturally in the ſouth of France and Italy; the ſtalks of this divide into a great number of branches, which divide again toward the top into ſeveral ſmaller, fully garniſhed with very narrow leaves their whole length; the flowers grow in large cluſters at the top, forming a ſort of corymbus; they are of a pale bluiſh colour, and appear the beginning of Auguſt. This is hardy, and may be propagated by parting the roots, as the former.

The eleventh ſort riſes four feet high, with a ſingle ſtalk, and oval leaves growing cloſe to the ſtalks, which are terminated by ſlender looſe ſpikes of pale blue flowers, which appear about Michaelmas. This grows naturally in North America, and is propagated as the ſorts above-mentioned.

The twelfth ſort ſends up ſlender ſtalks three feet high, which ſend out ſlender ſide branches moſt of their length, ſo as to form a thick buſh; theſe are garniſhed with very narrow leaves their whole length, and are terminated by ſingle flowers.

The thirteenth ſort grows about two feet high, having ſlender ſtalks, garniſhed with oblong, pointed, heart-ſhaped leaves, which are ſharply ſawed on their edges; the upper part of the ſtalks is divided into ſeveral ſmall branches, which are terminated by white flowers growing in looſe panicles. This flowers in September, and may be propagated as the former.

The fourteenth ſort ſends up ſtalks five feet high, which put out many ſlender ſide branches, garniſhed with narrow ſpear-ſhaped leaves, and are terminated by ſpikes of ſmall white flowers, which appear the end of October. This ſort ſpreads greatly at the root, ſo is apt to over-run the borders.

The fifteenth ſort hath narrow, oblong, hairy leaves at the bottom; the ſtalks riſe three feet high, garniſhed with ſmall, narrow, rough leaves, which turn backward; the ſtalks ſend out many ſide branches, each being terminated by a ſingle large blue flower. This ſort flowers the end of October, and continues moſt part of November, when it makes a fine appearance. It doth not multiply faſt by its roots, but may be propagated in plenty, by cuttings made from the young ſhoots in May, which, if planted in a bed of light earth, and ſhaded from the ſun, will take root, and flower the ſame year. It is commonly called by the gardeners Cateſby's Starwort, from Mr. Cateſby, who brought it from Virginia.

The ſixteenth ſort ſends up ſeveral ſtalks a foot and a half high, garniſhed with rough ſpear-ſhaped leaves, ſending out many ſide branches which diverge from the ſtalk every way; theſe are terminated for the moſt part by one large blue flower, ſomewhat like thoſe of the Italian Starwort, but paler, and comes earlier to flower. It grows naturally on the Alps, and is propagated by parting the root.

The ſeventeenth ſort riſes to the height of five feet, with branching ſtalks, garniſhed with oblong ſpear-ſhaped leaves, which are ſawed on their edges. Each of the ſide branches are divided at the top into ſeveral foot-ſtalks, which are terminated by large, pale, blue flowers, and are in beauty in October. This is propagated by parting the roots, as the ſorts beforementioned. It grows naturally in North America.

The eighteenth ſort was brought from Virginia many years ago, by Mr. John Tradeſcant, who was a great collector of rarities; and from his garden it was ſoon diſperſed, and became common. It is generally known by the title of Michaelmas Daiſey, from its flowering about old Michaelmas day. The ſtalks of this ſort are numerous, and riſe about three feet and a half high, being fully garniſhed with oblong leaves ending in a point, whoſe baſe half embrace the ſtalks. Theſe ſhoot out many lateral branches, which are terminated by pretty large flowers, of a very pale bluiſh colour, tending to white. The roots of this multiply very faſt, and the ſeeds often are blown about, ſo that it propagates ſo much as often to be troubleſome; it will thrive in any ſituation.

The nineteenth ſort ſends up ſeveral ſtrong hairy ſtalks, which riſe a foot and a half high, having many oblong rough leaves ending in a point, whoſe baſe half embrace the ſtalks, which divide into many ſmall branches at the top, forming a kind of corymbus, each being terminated by one large blue flower, having a very hairy empalement. This flowers the latter end of July. It grows naturally on the Alps, ſo is very hardy, but ſhould have a moiſt ſoil and a ſhady ſituation. It is propagated by parting the roots.

The twentieth ſort riſes with ſtrong hairy ſtalks, to the height of eight or nine feet, which are upright, unbranched, and garniſhed with oblong hairy leaves, ending in a point; their baſe half ſurrounds the ſtalks, which are for the moſt part terminated by three large purple flowers inclining to red, and ſit cloſe to the top of the ſtalk, ſurrounded by a few narrow leaves. This ſort flowers in November. It came from Philadelphia, where it naturally grows, and is propagated by parting the roots; it delights in a moiſt ſoil.

The twenty-firſt ſort hath ſlender purpliſh ſtalks, which riſe about three feet high, ſending out many ſide branches almoſt the whole length, which ſpread horizontally, garniſhed with narrow, ſmall, ſpear-ſhaped leaves; the flowers are produced in a ſort of looſe ſpike, growing one above another on each ſide the ſtalk. Theſe are ſmall, of a pale purpliſh colour, and appear in November. It grows naturally in North America, and is eaſily propagated by parting the roots.

The twenty-ſecond ſort I received from Philadelphia, where it grows naturally. This ſends up ſtiff channelled ſtalks about two feet high, garniſhed with rough ſpear-ſhaped leaves ending in a point, placed alternately on every ſide the ſtalks; the flowers are white, and grow in a ſort of umbel at the top of the ſtalks. It flowers the end of September, and is propagated by parting the roots.

The twenty-third ſort I received from Mr. Peter Collinſon, F. R. S. who procured it from Penſylvania. This hath much the appearance of the former ſort, but the leaves are narrower, whiter on their under ſide, and have three longitudinal veins; the flowers are alſo larger and whiter. It grows about the ſame height, and flowers at the ſame time with the former.

The twenty-fourth ſort riſes four feet high, the bottom leaves are oval and half ſurround the ſtalk at their baſe; the upper leaves are ſmall and ſpear-ſhaped; the ſtalks put out ſide branches toward the top, which grow erect, forming a looſe ſpike, each being terminated by one large blue flower, with a leafy foot-ſtalk; this flowers about the end of October. It grows naturally in North America, and is propagated by parting the roots.

The twenty-fifth ſort ſends up from the root ſeveral ſlender ſtalks near three feet high, garniſhed by many very narrow leaves, and puts out ſide branches, each being terminated by one white flower. This grows naturally in Philadelphia; it flowers in November, and is eaſily propagated by parting the roots.

The twenty-ſixth ſort riſes about a foot and a half high; the ſtalks are garniſhed with narrow, ſpear-ſhaped, ſmooth leaves: the end of the ſtalks are terminated by foot-ſtalks on every ſide, each having one pale blue flower. This grows naturally in Canada, and is propagated by parting the roots. It is titled After Canadenſis linariæ folio. Hort. R. Par.

The twenty-ſeventh ſort grows about two feet high, with erect ſtalks, garniſhed with narrow ſpear-ſhaped leaves, which come out irregularly in cluſters; from the upper part of the ſtalks, there are a few ſide branches produced, which are garniſhed with narrow leaves; the flowers are produced in a panicle, which are of a pale blue colour, and appear in September. This is propagated by parting the roots.

The twenty-eighth ſort is an annual plant, which when once introduced into a garden, the ſeeds will ſcatter, and the plants come up without care. This ſends up ſtrait ſtalks about two feet high, which are terminated by white flowers growing in form of a corymbus. It flowers in Auguſt, and the ſeeds ripen in October, and grows naturally in North America.

The twenty-ninth ſort grows naturally at the Cape of Good Hope. This riſes with a woody ſtem about three feet high, ſending out ſide branches which are ligneous, garniſhed with narrow leaves coming out in cluſters from one point, like thoſe of the Larch-tree; the flowers are produced from the ſide of the branches, upon long ſlender foot-ſtalks ſingly; theſe are of a pale blue colour, and appear the beginning of March; as this plant never produces ſeeds in Europe, it is only propagated by cuttings, which may be performed any time in ſummer. Theſe ſhould be planted in ſmall pots filled with light earth, and plunged into an old hot-bed; where, if they are ſhaded from the ſun, and gently watered, they will put out roots in ſix weeks, when they may be placed in the open air; and in about a month after they ſhould be ſeparated, each planted into a ſmall pot filled with light ſandy earth. In October theſe muſt be removed into the green-houſe, and placed where they may enjoy as much free air as poſſible, but be ſecured from froſt or damps, either of which will deſtroy them; ſo that they are much eaſier preſerved in a glaſs-caſe, where they will enjoy more light and air than in a green-houſe; but they muſt not be placed in a ſtove, for artificial heat will ſoon deſtroy the plants. This ſort is at preſent but in few Engliſh gardens.

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The thirtieth ſort is a native of China, from whence the ſeeds were ſent to France by the miſſionaries, where the plants were firſt raiſed in Europe. In the year 1731, I received ſeeds of this, from which I raiſed plants with red, and ſome with white flowers; and in 1736, I received ſeeds of the blue flower, but theſe were all ſingle. They came by the title of La Reine Marguerette, or the Queen of Daiſies, by which title the French ſtill call it. In 1752, I received ſeeds of the double flowers both red and blue, and in 1753, the ſeeds of the double white ſort, from my worthy friend Dr. Job Baſter, F. R. S. of Zirkzee. Theſe have retained their difference from that time without variation, yet as they are generally ſuppoſed to be only varieties, I have not inſerted them as different ſpecies.

As theſe are annual plants, they are only propagated by ſeeds, which muſt be ſown in the ſpring upon a gentle hot-bed, juſt to bring up the plants; for they ſhould be inured to the open air as ſoon as poſſible, to prevent their being drawn up very weak: when the plants are big enough to remove, they ſhould be carefully taken up and planted in a bed of rich earth at ſix inches diſtance each way, obſerving to ſhade them from the ſun till they have taken new root; and if the ſeaſon proves dry, they muſt be often refreſhed with water. In this bed they may remain a month or five weeks, by which time they will be ſtrong enough to tranſplant into the borders of the flower-garden where they are deſigned to remain; the plants ſhould be taken up carefully, with large balls of earth to their roots, and the ground dug up and well broken with the ſpade, where the holes are made to receive the plants: after they are planted, and the earth cloſed about their roots, there ſhould be ſome water given them to ſettle the earth. This work ſhould, if poſſible, be done when there is rain, for then the plants will ſoon take new root, after which time they will require no other care but to keep them clear from weeds.

In Auguſt theſe plants will flower, by which time if the ground is rich in which they are planted, they will be two feet high, and furniſhed with many ſide branches, each of which is terminated by a large radiated flower, ſome white, ſome red, and others blue. Theſe are ſome of the greateſt ornaments in the flower-garden in autumn, during their time of flowering. The ſeeds ripen the beginning of October, which ſhould be gathered when it is perfectly dry; and in order to preſerve the kinds with double flowers, thoſe which grow upon the ſide branches, which are commonly fuller of leaves than the flowers on the main ſtem, ſhould always be preſerved for ſeeds.

The thirty-firſt ſort was diſcovered by the late Dr. Houſton in the year 1731, at La Vera Cruz in New Spain. This is an annual plant, which riſes with an upright ſtalk about one foot high, garniſhed the whole length with winged leaves, each conſiſting of two or three pair of lobes, terminated by an odd one: each of theſe lobes are heart-ſhaped, and ſawed on their edges; at the top of the ſtalk is produced one large Orange-coloured flower, having a ſingle empalement, cut into many ſlender ſegments which end in points. After the flower is paſt, each floret is ſucceeded by an oblong angular ſeed, crowned with long down. This is propagated by ſeeds, which ſhould be ſown on a moderate hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted into a ſeparate ſmall pot filled with rich earth, and plunged into the tan-bed, obſerving to ſhade them until they have taken new root, as alſo to refreſh them with water, and in warm weather admit free air to the plants. When theſe pots are filled with their roots, the plants ſhould be carefully ſhaken out; and after paring off the outſide roots, put into larger pots, filled with light earth, and plunged into the hot-bed again, where they may remain to flower and perfect their ſeeds, for they will not thrive in the open air. This ſort flowers in July, and the ſeeds ripen in September.

The thirty-ſecond ſort was diſcovered by the late Dr. William Houſton, in the year 1729, growing in plenty in the ſandy ground about Vera Cruz, in America, where he drew the figure, and made a deſcription of the plant upon the ſpot; which he ſent to England with the ſeeds, ſome of which grew in the Chelſea garden, and the plants flowered the following ſummer, but did not perfect their ſeeds.

It hath buſhy fibrous roots, which creep in the ground, and ſend out many ſlender round ſtalks, which bend and incline to the ground. Theſe are about four or five inches long, deſtitute of leaves, each ſuſtaining one flower, in ſhape and ſize of thoſe of the common Field Daiſey, of a whitiſh purple colour, but the rays are narrower. The diſk is compoſed of ſeveral florets, which are ſucceeded by ſmall ſeeds crowned with a pappous down. The empalement which includes the flowers, is ſcaly.

As this plant is a native of a warm climate, it will not live in the open air in England; therefore the ſeeds muſt be ſown in a hot-bed, and the plants will require a ſtove to maintain them through the winter.

The thirty-third ſort is a native of North America. This hath upright ſtalks about three feet high, garniſhed with ſpear-ſhaped ſawed leaves; the flowers are produced in bunchy panicles, having rough empalements. It flowers the end of Auguſt, and is propagated by parting the roots in autumn.

The thirty-fourth ſort grows naturally in Siberia; the ſtalks are ſtriated about two feet high, ſending out ſide branches, garniſhed with rough, veined, ſpear-ſhaped leaves; the foot-ſtalks of the flowers are woolly, each ſupporting one large blue flower. This flowers in Auguſt, and is propagated by parting the roots in autumn.

The thirty-fifth ſort ſends up rough ſtalks about two feet high, dividing toward the top into many forked branches, diverging from each other, garniſhed below with oval ſawed leaves; but the flowering ſtalks have entire obtuſe leaves which embrace them with their baſe; the flowers are growing almoſt in an umbel; theſe appear the beginning of September. It is propagated by parting the roots as the former.

ASTERISCUS. See BUPHTHALMUM.

ASTEROIDES, Baſtard Starwort. See INULA.

ASTRAGALOIDES. See PHACA.

ASTRAGALUS, Wild Liquorice, Liquorice Vetch, or Milk Vetch.

The CHARACTERS are,

It hath a butterfly flower, whoſe empalement is of one leaf, cut into five acute ſegments at the top. The ſtandard (or vexillum) is upright, blunt, and reflexed on the ſides; the wings are oblong, and ſhorter than the ſtandard; the keel is the ſame length with the wings, and bordered. It hath ten ſtamina, nine of which are joined, and one ſtands ſingly; theſe are crowned by roundiſh ſummits. At the bottom of the flower is ſituated a taper germen, ſupporting an awl-ſhaped ſtyle, crowned by a blunt ſtigma. The germen afterward becomes a pod having two cells, each having a row of kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs of plants, entitled Diadelphia Decandria, from the flower having ten ſtamina joined in two bodies.

The SPECIES are,

1. ASTRAGALUS (*Glycyphyllos*) cauleſcens proſtratus leguminibus ſubtriquetis arcuatis foliis ovalibus pedunculo longioribus. Lin. Sp. Plant. 758. *Stalky proſtrate Milk Vetch, with crooked pods almoſt triangular, and oval leaves longer than the foot-ſtalk.* Aſtragalus luteus perennis procumbens vulgaris ſylveſtris. Mor. Hiſt. 2. 107. *ſometimes called Wild Liquorice.*
2. ASTRAGALUS (*Hamoſis*) cauleſcens procumbens, leguminibus ſubulatis recurvatis glabris. Hort. Upſal. 226. *Stalky trailing Milk Vetch, with ſmooth awl-ſhaped pods bending inward.* Aſtragalus luteus annus Monſpeliacus procumbens. Mor. Hiſt. 2. 108.

A S T

3. Astragalus (*Alopecuroides*) caulescens, spicis cylindricis subsessilibus, calycibus leguminibusque lanatis. Lin. Sp. Plant. 755. *Stalky Milk Vetch with cylindrical spikes growing close to the stalks, and woolly pods and empalements.* Astragalus Alpinus procerior Alopecuroides. Tourn. Inst. 416.

4. Astragalus (*Cicer*) caulescens prostratus, leguminibus subglobosis inflatis mucronatis pilosis. Hort. Upsal. 226. *Milk Vetch with a prostrate stalk, and a globular, swelling, hairy pod, ending in a point.* Astragalus luteus perennis siliquâ gemellâ rotundâ vesicam referente. Mor. Hist. 2. 107.

5. Astragalus (*Epiglottis*) caulescens procumbens, leguminibus capitatis cordatis acutis reflexis complicatis. Lin. Sp. Plant. 759. *Milk Vetch with trailing stalks, and pods growing in heads, which are heart-shaped, pointed, reflexed, and complicated.* Astragalus Hispanicus siliquâ epiglottidi simili flore purpureo major. H. L. 74.

6. Astragalus (*Montanus*) subacaulos scapis folio longioribus, floribus laxè spicatis erectis, leguminibus ovatis acumine inflexo. Prod. Leyd. 392. *Low Milk Vetch with flower-stalks longer than the leaves, and flowers growing in loose upright spikes.* Onobrychis floribus viciæ majoribus cæruleo-purpurascentibus sive foliis tragacanthæ. C. B. P. 351.

7. Astragalus (*Bæticus*) caulescens procumbens, spicis pedunculatis, leguminibus prismaticis rectis triquetris apice uncinatis. Hort. Cliff. 225. *Milk Vetch with trailing stalks, spikes of flowers with foot-stalks, and upright triangular pods shaped like a prism pointed at the top.* Astragalus annuus maritimus procumbens latifolius floribus pediculo insidentibus. Tourn. Inst. 416.

8. Astragalus (*Arenarius*) subcaulescens procumbens floribus subracemosis erectis foliis tomentosis. Lin. Sp. Plant. 759. *Low trailing Milk Vetch with branching flowers growing erect, and woolly leaves.* Astragalus incanus parvus purpureus nostras. Pluk. Alm. 59.

9. Astragalus (*Physodes*) acaulos scapis folia æquantibus leguminibus inflatis subglobosis nudis. Lin. Sp. Plant. 760. *Low Milk Vetch with flower-stalks as long as the leaves, and naked, globular, swelling pods.* Astragalus acaulos leguminibus inflatis subglobosis. Amœnit. Acad.

10. Astragalus (*Christianus*) caulescens erectus floribus glomeratis subsessilibus ex omnibus axillis foliaceis. Lin. Sp. 755. *Milk Vetch with upright stalks, and glomerated flowers growing close to them, proceeding from all the wings of the leaves.* Astragalus Orientalis maximus incanus erectus, caule ab imo ad summum florido. Tourn. Cor. 29.

11. Astragalus (*Ægyptiacus*) caulescens scapis folio longioribus floribus laxè spicatis erectis, leguminibus arcuatis. *Stalky Milk Vetch with flower-stalks longer than the leaves, upright flowers growing in loose spikes, and arched pods.* Astragalus Ægyptius floribus spicatis purpurascentibus siliquis incurvis. Juss.

12. Astragalus (*Sesameus*) caulescens diffusus capitulis subsessilibus lateralibus leguminibus erectis subulatis acumine reflexis. Hort. Cliff. 361. *Milk Vetch with diffused stalks, flower-heads growing close to the sides of the stalks, and awl-shaped upright pods reflexed at their points.* Astragalus annuus foliis & siliquis hirsutis plurimis in foliorum alis sessilibus. Pluk. Alm. 60.

13. Astragalus (*Galegiformis*) caulescens strictus glaber, floribus racemosis pendulis, leguminibus triquetris utrinque mucronatis. Lin. Sp. 1066. *Milk Vetch with smooth slender stalks, hanging branching flowers, and three-cornered pointed pods.* Astragalus Orientalis altissimus folio galegæ flore parvo flavescente. Tourn. Cor. 29.

14. Astragalus (*Uralensis*) acaulos scapo erecto foliis longiore leguminibus subulatis inflatis villosis erectis. Hort. Upsal. 226. *Low Milk Vetch, with upright foot-stalks to the flowers longer than the leaves, and awl-shaped, upright, swoln, hairy pods.* Astragalus non ramosus villosus & incanus spicatus floribus purpuro-violaceis. Amman. Ruth. 167. p. 126.

15. Astragalus (*Carolinianus*) caulescens erectus lævis pedunculis spicatis leguminibus ovato-cylindricis stylo acuminatis. Lin. Sp. Plant. 757. *Smooth, upright, stalky Milk Vetch, with spiked stalks, and oval cylindrical pods ending in sharp points.* Astragalus procerior non repens flore viridi flavescente. Hort. Elth. 45.

16. Astragalus (*Canadensis*) caulescens diffusus, leguminibus subcylindricis mucronatis foliolis subtus subvillosis. Lin. Sp. Plant. 757. *Milk Vetch with diffused stalks, pointed cylindrical pods, and the small leaves hairy on their under side.* Astragalus Canadensis flore viridi flavescente. Tourn. Inst. 416.

17. Astragalus (*Pilosus*) caulescens erectus pilosus floribus spicatus leguminibus subulatis pilosis. Lin. Sp. Plant. 756. *Milk Vetch with hairy upright stalks, flowers growing in spikes, and awl-shaped hairy pods.* Astragalus villosus erectus spicatus floribus flavescentibus. Amman. Ruth. 166.

18. Astragalus (*Procumbens*) incanus caulibus procumbentibus scapis folio æquantibus floribus glomeratis. *Hoary Milk Vetch with trailing stalks, foot-stalks equal with the leaves, and glomerated flowers.* Astragalus supinus siliquis villosis glomeratis. Tourn. Inst. R. H. 417.

19. Astragalus (*Incanus*) caulescens incanus, leguminibus subulatis recurvatis incanis. *Hoary stalky Milk Vetch, with awl-shaped recurved pods which are hoary.* Astragalus incanus siliquâ recurvâ. Bot. Monsp.

20. Astragalus (*Capitatus*) caulescens capitulis globosis, pedunculis longissimis, foliolis emarginatis. Hort. Cliff. 360. *Stalky Milk Vetch with globular heads, very long foot-stalks, and the small leaves crenated at their points.* Astragalus Orientalis villosissimus capitulis rotundioribus floribus purpureis. Tourn. Cor. 29.

21. Astragalus (*Chinensis*) caulescens procumbens, capitulis pedunculatis, leguminibus prismaticis rectis triquetris apice subulatis. *Milk Vetch with trailing stalks; the foot-stalks terminated by flowers collected in heads, and three-cornered pods shaped like prisms.*

22. Astragalus (*Uncatus*) acaulis exscapus, leguminibus subulatis hamatis folio longioribus, foliolis obcordatis. Lin. Sp. 1072. *Milk Vetch without stalks, awl-shaped hooked pods longer than the leaves, and the small leaves almost heart-shaped.*

The first sort grows wild upon chalky ground in many parts of England, so is not often admitted into gardens. The root of this is perennial, but the stalks decay every autumn: it creeps at the root, so that it is too apt to spread where it is suffered to grow. It flowers in June, and the seeds ripen in September.

The second sort is annual; the branches of this trail upon the ground, which are striated; the leaves are winged, composed of about eight pair of lobes, terminated by an odd one; these are crenated at their points. The foot-stalks of the flowers arise from the wings of the leaves, which are about three inches long, garnished toward the top with a few pale yellow flowers rising one above another; these are succeeded by oblong pods, which bend in form of a sickle, being round on their outer side, but flatted on the opposite, ending in a point, opening in two cells, each having a row of square seeds. It flowers in June, and the seeds ripen in September. The seeds of this should be sown in April, in the place where they are to remain, and require no other care but to draw the plants out where they come up too thick, leaving them a foot and a half asunder, and keep them clean from weeds.

The third sort is a biennial plant, which grows naturally on the Alps. This rises with an upright hairy stalk near three feet high, garnished with long winged leaves, each having eighteen or twenty pair of oval lobes, terminated by an odd one. The flowers are produced in large cylindrical spikes from the wings of the leaves, sitting very close to the stalks, which are entirely covered with down, out of which the yellow flowers just peep; these are succeeded by oval

pods

pods ſhut up in the woolly empalements, having two cells, containing three or four ſquare ſeeds in each. It flowers in June and July, and the ſeeds ripen in autumn, ſoon after which the plants decay. The ſeeds of this ſhould be ſown in April, on an open border, where the plants are deſigned to remain; and when the plants come up, they ſhould be thinned, leaving them at leaſt two feet aſunder, and keep them clean from weeds; the ſecond year they will flower, and produce ſeeds.

The fourth ſort hath a perennial root, which ſends out ſeveral ſtriated ſtalks near three feet high, which, if not ſupported, proſtrate themſelves towards the earth. Theſe are garniſhed with winged leaves placed alternately, at two inches diſtance, which are compoſed of about ten pair of oval ſmall lobes, terminated by an odd one. The flowers ariſe from the wings of the leaves, upon foot-ſtalks two inches long, in ſmall looſe ſpikes, which are yellow, and ſhaped like the reſt of this genus, and are ſucceeded by hairy, globular, ſwelling pods, ending with a ſharp point, opening in two cells, in each of which are contained two or three hard reddiſh ſeeds. It flowers in July, and the ſeeds ripen in autumn. This grows naturally in the ſouth of France and Italy. It is eaſily propagated by ſeeds, which ſhould be ſown upon an open border in the ſpring; and when the plants come up, they muſt be thinned and kept clean from weeds till autumn, when they ſhould be tranſplanted to the place where they are to remain, and will afterward require no other culture, but to keep them clean from weeds. One or two of theſe plants in a garden by way of variety, may be admitted, but they have little beauty.

The fifth ſort is annual. This ſends out from the root two or three hairy trailing branches, which are garniſhed with winged leaves, compoſed of ten or twelve pair of blunt lobes, terminated by an odd one: the flowers come out from the wings of the leaves upon naked foot-ſtalks, four or five inches long, and are gathered into a round head; theſe are ſhaped like the others, but are pretty large, and of a deep purple colour, which are ſucceeded by ſhort pods rough on their outſides, and when opened, are ſhaped like a heart, ending in a ſharp point, containing three or four ſeeds.

The ſeeds of this ſhould be ſown on an open border in April, where the plants are to remain, and treated as the other annual ſorts before-mentioned. It flowers in July, and the ſeeds ripen in autumn. It grows naturally in Spain and Portugal, from whence I have received the ſeeds.

The ſixth ſort is a perennial plant, which grows naturally upon the mountains in Spain, from whence I received it. This is a low plant, ſeldom riſing with a ſtem more than three inches high, ſending out winged leaves on every ſide, which are compoſed of many pairs of narrow lobes, ſet very cloſe together on the midrib, terminated by an odd one. The flowers grow upon long foot-ſtalks, which riſe above the leaves; theſe are large and of a purple colour, growing in a looſe ſpike, and ſtand erect, and are ſucceeded by oblong crooked pods opening in two cells, filled with ſquare ſeeds. It flowers in June, and the ſeeds ripen in Auguſt. This is propagated by ſeeds, which ſhould be ſown, and the plants treated in the ſame manner as the fourth ſort, but ſhould have a ſhady ſituation and a ſtronger ſoil.

The ſeventh ſort is annual. This ſends out ſeveral trailing branches near two feet long, which are garniſhed with winged leaves, compoſed of about ten pair of blunt lobes, ſet thinly on the midrib, terminated by an odd one: at the wing of each leaf comes out a foot-ſtalk near two inches long, ſuſtaining four or five yellow flowers at the top, which are ſucceeded by triangular brown pods, ſhaped like a priſm, growing erect, and open in two cells filled with greeniſh ſquare ſeeds. It flowers in July, and the ſeeds ripen in autumn, ſoon after which the plants decay.

This may be treated in the ſame manner as the ſecond.

The eighth ſort is a perennial plant, which grows naturally upon hills in ſeveral parts of England, particularly in the North. This is a low plant, ſeldom riſing more than two or three inches high, having many winged leaves compoſed of narrow woolly lobes, placed cloſe on the midrib; the flowers are pretty large, of a purple colour, growing in looſe ſpikes. It flowers in June, and the ſeeds ripen in Auguſt. This may be propagated as the fourth ſort, and ſhould have a ſhady ſituation.

The ninth ſort hath a perennial creeping root, ſending out leaves, which are compoſed of many pair of oval lobes, terminated by an odd one; the flower-ſtalks are as long as the leaves, which ſupport a cylindrical ſpike of yellow flowers, which are ſucceeded by ſwollen pods, opening in two cells, containing ſeveral greeniſh ſeeds. This may be propagated as the fourth ſort, and muſt have a ſhady ſituation. It flowers in June, and grows naturally in Siberia.

The tenth ſort was diſcovered by Dr. Tournefort in the Levant, who ſent the ſeeds to the royal garden at Paris, where they ſucceeded, from whence I was furniſhed with them. This ſends up ſtalks near three feet high, which are large at bottom, and gradually diminiſh to the top; the leaves alſo at bottom are very long, and diminiſh upward, ſo as to form a ſort of pyramid; theſe are winged, and compoſed of many large oval pair of lobes, which are placed thinly on the midrib, and terminated by an odd one; the flowers come out in cluſters from the wings of each leaf, beginning near the root where the foot-ſtalks are the longeſt, and continuing upward, diminiſhing in their number. Theſe are large, of a bright yellow colour, and are ſucceeded by cylindrical pods opening in two cells, filled with ſquare yellow ſeeds. It flowers in July, and in very favourable ſeaſons will perfect ſeeds in England. It is propagated by ſeeds, which ſhould be ſown, and the plants afterward treated as hath been directed for the fourth ſort; with this difference only, to plant them in a warm border and a dry ſoil, otherwiſe the plants will not thrive well in this climate. The third year from ſeed the plants will flower, and continue many years in a proper ſoil.

The eleventh ſort grows naturally in Egypt, from whence the ſeeds were ſent to the royal garden at Paris, and Dr. Juſſieu was ſo good as to ſend me part of the ſeeds: this is an annual plant, which riſes with upright ſtalks a foot and a half high, thinly garniſhed with winged leaves, compoſed of about twelve pair of oval lobes, terminated by an odd one; the foot-ſtalks of the flowers ariſe from the wings of the leaves, and are extended beyond them; theſe are terminated by looſe ſpikes of yellow flowers, which are ſucceeded by ſickle-ſhaped pods. It flowers in July, and the ſeeds ripen in autumn, ſoon after which the plants decay. It may be propagated by ſeeds in the ſame manner as hath been before directed for the annual ſorts, putting the ſeeds in a warm border and a dry ſoil, where the plants will perfect their ſeeds very well.

The twelfth ſort grows naturally in Italy, and the ſouth of France, from whence I received the ſeeds. This is an annual plant, which ſends out ſeveral weak ſtalks without any order, garniſhed with winged leaves, compoſed of ten or twelve pair of lobes, and ſometimes terminated by an odd one; theſe are hairy; at the foot-ſtalks of the leaves the flowers come out in ſmall cluſters, ſitting cloſe to the ſides of the ſtalks, which are of a copper colour, and are ſucceeded by awl-ſhaped pointed pods growing erect, and reflected at their points. This is propagated by ſeeds in the ſame manner as the other annual ſorts before mentioned; it flowers in July, and the ſeeds are ripe in autumn.

The thirteenth ſort was diſcovered by Dr. Tournefort, in the Levant, who ſent the ſeeds to the royal garden

at

at Paris, where they ſucceeded, and produced new ſeeds, ſo that many of the European gardens have been ſince ſupplied with it; this hath a perennial root, which ſends out many upright ſtalks upward of five feet high, which are garniſhed with winged leaves, compoſed of about fourteen pair of oval lobes, terminated by an odd one; from the wings of the leaves the foot-ſtalks of the flowers ariſe, which are garniſhed with ſmall yellow flowers, growing in looſe ſpikes, and are extended beyond the leaves; theſe are ſucceeded by very ſhort triangular pods, ending in a point, which open in two cells, filled with Aſh-coloured ſquare ſeeds. This flowers in June or July, and the ſeeds ripen in autumn. It is propagated by ſeeds, which may be ſown in the ſpring, upon a border of light earth, and treated in the ſame manner as the fourth ſort, till the following autumn, when the plants ſhould be removed to an open ſituation and a dry ſoil, and when they have taken root, will require no farther culture. I have a root of this ſort growing in the Chelſea garden, which is more than thirty years old, and produces plenty of ſeeds every year.

The fourteenth ſort grows naturally upon the mountains in Germany; this never riſes with a ſtalk, but ſends out divers winged leaves from the root, which are compoſed of many blunt lobes, placed by pairs, and terminated by an odd one; the foot-ſtalks of the flowers ariſe immediately from the root, and are longer than the leaves, being terminated by ſpikes of blue flowers, which are ſucceeded by ſwelling awl-ſhaped pods, which are erect and hairy, having two cells which are filled with greeniſh ſeeds. It flowers in July, and the ſeeds ripen in autumn. The root is abiding, and the plant is propagated by ſeeds as the fourth ſort, but ſhould have an open ſituation.

The fifteenth ſort grows naturally in Carolina, from whence I received the ſeeds; this hath a perennial root, but an annual ſtalk, which decays in autumn; from the root ariſe ſeveral upright ſtalks three feet high, garniſhed with winged leaves, compoſed of eighteen or twenty pair of oval ſmooth lobes, terminated by an odd one; from the wings of the leaves ariſe the foot-ſtalks, which are terminated by ſpikes of greeniſh yellow flowers, which are ſucceeded by oval cylindrical pods, to which adhere the ſtyle, which extends beyond the pods in a point. This flowers in Auguſt, but unleſs the ſeaſon is warm, the plants ſeldom ripen their ſeeds in England. It is propagated by ſeeds, which ſhould be ſown upon a moderate hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each planted in a ſmall pot filled with earth from the kitchen-garden, and plunged again into the hot-bed, to forward their making new roots; and when they are eſtabliſhed in the pots, they muſt be inured to the open air, into which they ſhould be removed the end of May, placing them in a ſheltered ſituation, where they may remain till October, when they ſhould be placed under a common frame to ſhelter them in winter; and in the ſpring they may be turned out of the pots, and planted in a warm border, where they will thrive and flower; and if the winter proves very ſevere, a little old tan ſhould be laid over the roots, which will effectually preſerve them.

The ſixteenth ſort grows naturally in moſt parts of North America; this hath a perennial root, which ſends out many irregular ſtalks about two feet high, garniſhed with winged leaves, compoſed of many pair of oval lobes, hairy on their under ſide; from the wings of the leaves come out the foot-ſtalks, ſupporting ſpikes of greeniſh yellow flowers, which are ſucceeded by cylindrical pods, ending in a point. This flowers in July, and the ſeeds ripen the beginning of October. It is propagated by ſeeds, which ſhould be managed as thoſe of the fifteenth ſort, but the plants are hardier, ſo will live thro' the winter in a common bed of light earth without covering.

The ſeventeenth ſort riſes with upright hairy ſtalks two feet high, garniſhed with winged leaves, compoſed of many pair of oval woolly lobes, terminated by an odd one; from the wings of the leaves ariſe the foot-ſtalks, which are terminated by cloſe ſpikes of yellow flowers; theſe are ſucceeded by hairy awl-ſhaped pods, having two cells, filled with brown ſeeds. This flowers in June, and the ſeeds ripen in autumn. It grows naturally in Siberia, from whence the ſeeds were ſent to Dr. Amman, at Peterſburgh, who communicated them to me. It is a perennial plant, and propagated by ſeeds in the ſame manner as the fourth ſort.

The eighteenth ſort is a biennial plant: the ſeeds of this were ſent me from Spain, where the plant grows naturally. This ſends out many trailing ſtalks, which are divided into many ſmaller branches, garniſhed with many pair of narrow lobes, terminated by an odd one; the flowers are collected into heads, which terminate the foot-ſtalks, and are white; the foot-ſtalks are about the ſame length as the leaves; the pods are ſhort and triangular, and the whole plant is covered with a ſilvery down. The ſeeds of this ſhould be ſown upon an open bed of light earth, where the plants are to remain, and the plants afterward treated in the manner directed for the annual ſorts: the ſecond year they will flower and perfect their ſeeds, after which they ſeldom continue.

The ninteenth ſort grows upon the hills near Verona, from whence I received it. This ſends up an upright ſtalk, ſeldom more than ſix inches high, garniſhed with ſmall, winged, hoary leaves; the foot-ſtalks ariſe from the wings of the leaves, ſupporting three or four pale flowers, which are ſucceeded by ſickle-ſhaped hoary pods. This is a biennial plant, and ſhould be treated in the ſame manner as the laſt.

The twentieth ſort was diſcovered by Dr. Tournefort in the Levant, who ſent the ſeeds to the royal garden at Paris. This hath a perennial root, which ſends up ſeveral erect ſtalks, garniſhed with winged leaves, compoſed of ſeveral pair of lobes, indented at the top; from the wings of the leaves come out long foot-ſtalks, ſupporting a globular head of purple flowers; theſe are rarely ſucceeded by pods in England. It flowers the end of July. It is propagated by ſeeds, which ſhould be ſown upon a moderate hot-bed in the ſpring, and the plants treated in the ſame manner as hath been directed for the fifteenth ſort.

The twenty-firſt ſort grows naturally in China: the plant is annual; the ſtalks ſpread on the ſurface of the ground, which are cloſely garniſhed with winged leaves, compoſed of eight or ten pair of oval ſmooth lobes, ſitting cloſe to the midrib; theſe are ſlightly indented at their end. The foot-ſtalks of the flowers are produced from the wings of the ſtalk, two of them generally ariſing at each place, and are equal to the leaves in length, ſupporting a globular head of purple flowers, which are ſucceeded by three-cornered pods growing erect in a compact head, opening in two cells, filled with ſmall triangular ſeeds. This plant flowers in July and Auguſt, and the ſeeds ripen in autumn.

The ſeeds of this ſort ſhould be ſown upon a hot-bed in March, and when the plants come up and are fit to tranſplant, they ſhould be each put into a ſmall pot filled with light earth, and plunged into another moderate hot-bed, being careful to ſhade them from the ſun until they have taken new root; after which they ſhould have free air admitted to them daily, proportional to the warmth of the ſeaſon, and frequently but gently watered, with which management the plants will flower and produce ſeeds.

The twenty-ſecond ſort grows naturally about Aleppo, from whence the ſeeds were brought by Dr. Ruſſel. The plant is annual, ſending out a few branching ſtalks which trail upon the ground, garniſhed with narrow winged leaves, whoſe lobes are broader at their points than their baſe, and are indented ſo as

to become almoſt heart-ſhaped; the flowers are produced at the wings of the ſtalks in ſhort looſe ſpikes; they are almoſt white, and are ſucceeded by ſickle-ſhaped pods, having two cells filled with ſquare brown ſeeds. This flowers in July and Auguſt, and the ſeeds ripen in autumn.

This is propagated by ſeeds, which ſhould be ſown in the ſpring upon an open bed of light earth, and the plants treated afterward in the ſame manner as hath been directed for the annual ſorts before-mentioned.

ASTRANTIA, Maſterwort.

The CHARACTERS are,

It is a plant whoſe flowers grow in an umbel; the general umbel is compoſed of four or five ſmall ones. The involucrum of the general umbel is in one ſpecies compoſed of two large trifid leaves, and two entire. In another ſpecies of ſeveral ſmall leaves: the involucrum of the ſmall umbel is compoſed of many ſmall pointed leaves, which are longer than the umbels, coloured and ſpread open. The empalement of the flower is permanent, erect, and cut into five ſhort acute ſegments; the flower is compoſed of five petals, which are erect, bifid, and bend inward: it hath five ſtamina the length of the petals, crowned by ſingle ſummits; the oblong germen is ſituated below the receptacle, ſupporting two ſlender ſtyles, crowned by ſpreading ſtigma; the germen afterward becomes an oval, blunt, channelled fruit, divided into two parts, having two oblong oval ſeeds, incloſed in the cover.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. ASTRANTIA (*Major*) foliis radicalibus quinquelobatis ſerratis, caulinis trilobatis acutis. *Maſterwort with the lower leaves divided into five ſawed lobes, and thoſe on the ſtalks cut into three acute lobes.* Aſtrantia major coronâ floris purpuraſcente. Inſt. R. H. 314.
2. ASTRANTIA (*Candida*) foliis quinquelobatis lobis tripartitis. Haller. Helv. 439. *Maſterwort with leaves having five tripartite lobes.* Aſtrantia major coronâ floris candidâ. Tourn. Inſt. 314.
3. ASTRANTIA (*Minor*) foliis digitatis ſerratis. Lin. Sp. Plant. 255. *Maſterwort with fingered leaves which are ſawed.* Helleborus niger ſaniculæ folio minor. C. B. P. 186.

The firſt ſort hath many ſpreading leaves riſing from the root, which are compoſed of five large lobes, ſawed pretty deep on their edges; from between theſe the ſtalks ariſe near two feet high, having at each joint one leaf deeply cut into three ſharp-pointed lobes; at the top of the ſtalk is produced the umbel of flowers, at the bottom of which is ſituated the general involucrum, compoſed of two long trifid leaves, and two entire ones of the ſame length. The ſmall umbels ſtand upon long foot-ſtalks or rays, under which is placed the involucrum, compoſed of many ſpear-ſhaped pointed leaves, which extend beyond the rays, and are of a purpliſh colour.

The ſecond ſort hath much the appearance of the firſt, ſo has been ſuppoſed to be only a variety of it; but it differs from that in having five lobes to the leaves of the ſtalks, which are much ſhorter, and rounder at the point than thoſe of the other. The general involucrum of the umbel is compoſed of ſhort narrow leaves, and thoſe of the ſmaller umbels are ſhorter and white.

The third ſort ſeldom riſes a foot high; the foot-ſtalks of the leaves are four inches long; the leaves are divided into eight ſegments at the bottom, and ſpread out like a hand; theſe are deeply ſawed on their edges; the involucrum of the general umbel is compoſed of ſeveral very narrow leaves; the foot-ſtalks of the ſeparate umbels are very large and ſlender, and toward the top often divide into three, each having a ſmall umbel. The involucrums of theſe ſmall umbels are ſhort and white.

Theſe plants are very hardy; they may be propagated either by ſowing their ſeeds, or parting their roots. If they are propagated from ſeeds, they ſhould be ſown in autumn, ſoon after they are ripe, on a ſhady border; and, when the plants are come up, they ſhould be carefully weeded, and where they are too cloſe, ſome of the plants ſhould be drawn out, to allow room for others to grow, until Michaelmas, when they ſhould be tranſplanted where they are to remain; which ſhould always be in a moiſt ſoil and a ſhady ſituation. The diſtance theſe plants ſhould be placed, is three feet, for their roots will ſpread to a conſiderable width, if they are permitted to remain long in the ſame place. They require no other culture but to keep them clear from weeds, and every third or fourth year to be taken up at Michaelmas, and their roots parted and planted again. Theſe plants are ſeldom preſerved but in botanic gardens, there being no great beauty in their flowers. They all grow naturally upon the Alps.

ATHAMANTA. Lin. Gen. Plant. 301. Meum. Tourn. Inſt. R. H. 312. Spignel.

The CHARACTERS are,

It is a plant with an umbellated flower; the general umbel ſpreads open, and is compoſed of many ſmall ones; the involucrum of the great umbel is compoſed of many narrow leaves, which are ſhorter than the rays; thoſe of the ſmall ones are narrow, and equal with the rays: the flowers of the great umbel are uniform; thoſe of the ſmaller have five inflexed heart-ſhaped petals, which are a little unequal; each flower hath five ſlender ſtamina, which are of the ſame length with the petals, and crowned by roundiſh ſummits; the germen is ſituated below the receptacle, ſupporting two reflexed ſtyles, crowned by obtuſe ſtigma; the germen afterward becomes an oblong channelled fruit, divided into two parts, each containing one oval channelled ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs of plants, entitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. ATHAMANTA (*Meum*) foliolis capillaribus, ſeminibus glabris ſtriatis. Hort. Cliff. 93. *Spignel with hair-like leaves, and ſmooth channelled ſeeds.* Meum foliis Anethi. C. B. P. 148. *commonly called Spignel.*
2. ATHAMANTA (*Cretenſis*) foliolis linearibus planis hirſutis, petalis bipartitis, ſeminibus oblongis hirſutis. Lin. Mat. Med. 143. *Spignel with plain hairy leaves, petals divided into two parts, and oblong hairy ſeeds.* Daucus Creticus foliis fæniculi tenuiſſimis. C. B. P.
3. ATHAMANTA (*Sicula*) foliis inferioribus nitidis, umbellis primordialibus ſubſeſſilibus, ſeminibus piloſis. Hort. Upſal. 60. *Spignel with ſhining under leaves, the umbels at firſt ſitting cloſe, and hairy ſeeds.* Daucus ſecundus ſiculis ſophiæ folio. Zan. Hiſt. 80.
4. ATHAMANTA (*Oreoſelinum*) foliolis divaricatis. Flor. Suec. 249. *Athamanta with divaricated leaves.* Apium montanum folio ampliore. C. B. P. 153.
5. ATHAMANTA (*Cervaria*) foliolis pinnatis decuſſatis, inciſo-angulatis, ſeminibus nudis. Lin. Sp. 352. *Athamanta with winged leaves, whoſe lobes are angularly cut, and naked ſeeds.* Daucus montanus Apii folio major. C. B. P. 150.

The firſt ſort is the common Spignel uſed in medicine. This grows naturally in Weſtmoreland, and by the inhabitants there is called Bald-Money, or Bawd-Money; by ſome it is called Meu. This is a perennial plant; the ſtalks riſe a foot and a half high, and are channelled; the leaves are very ramoſe, and compoſed of many fine hair-like leaves ſet pretty cloſe, of a deep green; the ſtalk is terminated by an umbel of white flowers, which are ſucceeded by oblong ſmooth ſeeds.

This may be propagated by parting the roots at Michaelmas, or from ſeeds ſown ſoon after they are ripe; the plants ſhould have a ſhady ſituation and moiſt ſoil. It flowers in June, and the ſeeds ripen in Auguſt.

The ſecond ſort is the Daucus Creticus, of which there are two ſorts, whoſe ſeeds are indifferently uſed in the ſhops, one of which is annual, but that here mentioned is a perennial plant, which ſends out many

ſtalks, garniſhed with ſlender narrow leaves like thoſe of Fennel, irregularly diſpoſed. The flower-ſtalk riſes about two feet high, ſending out many branches, garniſhed the whole length with the ſame compound capillary leaves, and at the top are terminated by compound umbels, compoſed of near twenty ſmall ones; theſe have white flowers with five petals, which are ſucceeded by oblong, hairy, channelled fruit, divided into two parts, each containing one oblong hairy ſeed.

This ſort is propagated by ſeeds, which ſhould be ſown in autumn on an open bed of light dry ground; and when the plants come up in the ſpring, they ſhould be kept clean from weeds, and thinned where they are too cloſe, ſo that they may have room to grow till the following autumn, when they ſhould be carefully taken up, and planted at about a foot diſtance in a bed of light ſandy earth, where the roots will continue ſeveral years, and annually flower and produce ripe ſeeds. It flowers in June, and the ſeeds are ripe in September. This grows naturally in Candia, but is rarely injured by cold in this country.

The third ſort is a perennial plant; this ſends up from the root ſeveral upright ſtalks, near three feet high, which are terminated by compound umbels; theſe, at their firſt appearance, are very cloſe and compact, but afterward ſpread open, and divide into ſeveral ſmaller umbels; the foot-ſtalks or rays of theſe are ſhort and hairy. The flowers are compoſed of five white petals, which are not quite equal, and are ſucceeded by oblong woolly fruit, divided into two parts, each containing one oblong channelled ſeed.

This may be propagated in the ſame manner as the former, and is equally hardy; it grows naturally in Sicily, and ſome parts of Italy.

The fourth ſort is a perennial plant, which grows naturally in ſome particular parts of England, France, and Germany; the leaves of this are linear, and acutely cut into oblong ſegments; the ſtalks riſe two feet high, dividing toward the top into three or four branches, each being terminated by an umbel of white flowers, which are ſucceeded by oblong ſtriated ſeeds. It flowers in July, and the ſeeds ripen in autumn.

The fifth ſort grows naturally in the ſouth of France, and in Auſtria: this hath a perennial root; the ſtalks riſe three feet high, garniſhed with winged leaves, which are cut into angular ſegments; they are terminated by umbels of white flowers, which are ſucceeded by naked ſeeds. This flowers in July, and the ſeeds ripen in autumn.

Theſe two ſorts are ſeldom admitted into any gardens but thoſe of botaniſts, for the ſake of variety, being plants of little beauty or uſe. They are propagated by ſeeds, which ſhould be ſown in autumn ſoon after they are ripe, and the plants will appear the following ſpring, when they will require no other care but to thin them where they are too cloſe, and keep them clean from weeds. The ſecond ſummer they will flower and produce ripe ſeeds, but the roots will abide ſeveral years where they are deſired.

ATHANASIA. Lin. Gen. 943. Baccharis. Vaill. Act. Gall. 1719. Goldylocks.

The CHARACTERS are,

The empalement is imbricated, oval, and the ſcales are ſpear-ſhaped; the flower is of the compound kind; the florets are uniform and longer than the corolla; the hermaphrodite florets are funnel-ſhaped, cut into five ſegments, which are erect; they have each five ſhort hair-like ſtamina, with cylindrical tubuloſe ſummits, and an oblong germen with a ſlender ſtyle, terminated by an obtuſe bifid ſtigma; each floret has an oblong ſeed with a chaffy down between them.

This genus of plants is ranged in the firſt order of Linnæus's nineteenth claſs, entitled Syngeneſia Polygamia Æqualis; the florets of this order are all hermaphrodite.

The SPECIES are,

1. ATHANASIA (*Dentata*) corymbis impoſitis, foliis inferioribus linearibus dentatis, ſuperioribus ovatis ſerratis. Lin. Sp. 1181. *Athanaſia with a compound corymbus, the lower leaves linear and indented, the upper oval and ſawed.* Coma aurea Africana fruteſcens, foliis inferioribus inciſis, ſuperioribus dentatis. Com. Rar. Pl. 41.
2. ATHANASIA (*Trifurcata*) corymbis ſimplicibus, foliis trilobis cuneiformibus. Lin. Sp. 1181. *Athanaſia with a ſingle corymbus, and wedge-ſhaped leaves with three lobes.* Coma aurea Africana fruticans, foliis glaucis & in extremitate trifidis. Hort. Amſt. 2. p. 97.
3. ATHANASIA (*Crithmifolia*) corymbis ſimplicibus, foliis ſemitrifidis linearibus. Lin. Sp. 1181. *Athanaſia with a ſimple corymbus, and linear ſemitrifid leaves.* Coma aurea fruticans foliis anguſtiſſimis trifidis. Burm. Afr. 186.
4. ATHANASIA (*Pubeſcens*) corymbus ſimplicibus, foliis lanceolatis indiviſis villoſis. Amœn. Acad. 4. p. 329. *Athanaſia with a ſimple corymbus, and ſpear-ſhaped, undivided, hairy leaves.* Coma aurea Africana fruticoſa, omnium maxima, foliis tomentoſis & incanis. Hort. Amſt. 2. p. 93.
5. ATHANASIA (*Annua*) corymbus ſimplicibus coarctatis, foliis pinnatifidis dentatis. Lin. Sp. 1182. *Athanaſia with a ſimple corymbus, and winged indented leaves.* Elichryſum inodorum glabrum, coronopi folio glabrum. Magn. Montp. 307.
6. ATHANASIA (*Maritima*) pedunculis unifloris ſubcorymboſis, foliis lanceolatis indiviſis crenatis obtuſis tomentoſis. Lin. Sp. 1182. *Athanaſia with ſingle flowers on each foot-ſtalk formed like a corymbus, and ſpear-ſhaped, obtuſe, woolly leaves.* Gnaphalium maritimum. C. B. P. 263.

The firſt ſort grows naturally at the Cape of Good Hope: this hath a low, ſhrubby, branching ſtalk, which ſeldom riſes three feet high; the branches are garniſhed with two ſorts of leaves, thoſe toward the bottom are linear and indented, but the upper are oval and ſawed on their edges: the flowers are diſpoſed in a compound corymbus at the end of the branches; they are of a pale yellow, and appear early in ſummer, and if the ſeaſon proves favourable, will be ſucceeded by ripe ſeeds in autumn.

The ſecond ſort is a native of the Cape of Good Hope: this riſes with a ſhrubby ſtalk five or ſix feet high, dividing into many irregular branches, garniſhed with flat glaucous leaves cut at their extremity into three ſegments; theſe have an agreeable odour when bruiſed. The flowers are produced in a ſimple corymbus at the extremity of the branches; they are of a bright yellow colour, and appear in Auguſt, but are ſeldom ſucceeded by ripe ſeeds in England.

The third ſort grows naturally at the Cape of Good Hope: this hath a ſhrubby branching ſtalk like the former; the leaves are linear, and divided more than half their length, ſome into three, and others into five narrow ſegments: the flowers are produced at the extremity of the branches in a ſimple corymbus, like thoſe of the former ſort in ſhape and colour, of which there is a ſucceſſion on the ſame plant great part of ſummer; but unleſs the ſeaſon is warm, they are rarely ſucceeded by ripe ſeeds in England.

The fourth ſort riſes with a ſhrubby ſtalk ſix or ſeven feet high; the branches are garniſhed with hairy, ſpear-ſhaped, entire leaves; the flowers are yellow, and produced in a ſimple corymbus at the extremity of the branches, but are not ſucceeded by good ſeeds in England.

Theſe four ſorts are eaſily propagated by cuttings during the ſummer months. If theſe are planted either in pots or upon an old hot-bed, and cloſely covered with glaſſes, ſhading them in the heat of the day, and refreſhing them with water when they require it, they will put out roots in five or ſix weeks; and in two months they may be taken up and planted in pots filled with light earth, and placed in a ſhady ſituation until they have taken new root; after which they ſhould be removed to a ſheltered ſituation, mixing them with other exotic plants, where they may remain till the middle or end of October, according as the ſeaſon proves

proves favourable; then ſhould be removed either into a green-houſe, or a glaſs caſe, where they may enjoy as much free air as poſſible, but ſecured from froſt, with which management they will thrive and produce plenty of flowers; but where they are drawn weak in winter, they will not appear ſightly.

The fifth ſort is an annual plant, which grows naturally in Africa. This hath an herbaceous ſtalk about nine inches high, which divides toward the top into three or four branches, garniſhed with ſmooth leaves, divided into ſegments like thoſe of Buckshorn Plantain; the flowers are large, of a bright yellow colour, and are produced at the extremity of the branches in a compact ſimple corymbus; theſe appear in July and Auguſt, but are rarely ſucceeded by ripe ſeeds in this country.

This is propagated by ſeeds when they can be obtained good, which ſhould be ſown on a moderate hot-bed the latter end of March; when the plants are come up they ſhould have air in proportion to the warmth of the ſeaſon admitted to them, to prevent their drawing up weak; and ſo ſoon as they are big enough to remove they ſhould be tranſplanted on another gentle hot-bed, at three inchesdi ſtance, obſerving to ſhade them until they have got freſh root; after which they muſt have air and water, and by the end of May, the plants will have acquired ſtrength enough to be tranſplanted into the open air; when ſome may be planted in pots to place among other exotic plants in ſummer, and the others into warm borders, where they will flower all the autumn, but unleſs the ſeaſon is very warm, they will not ripen ſeeds.

The ſixth ſort grows naturally on the ſea coaſts in the warm parts of Europe, and alſo in ſome parts of Wales, from whence I have received plants. The ſtalks trail on the ground, ſeldom growing more than ſeven or eight inches long, garniſhed cloſely with woolly leaves, which are ſpear-ſhaped, entire, and obtuſe; the flowers are of a bright yellow, each produced on a ſingle foot-ſtalk, forming a kind of corymbus; they appear in June and July, but rarely ripen ſeeds in the garden.

This may be propagated by planting ſlips or cuttings during the ſummer months, in the ſame way as the African ſorts; ſome of the plants ſhould be put into pots to be placed under a hot-bed frame in winter, the other may be planted in a warm border, where if the winter proves favourable they will live, but they rarely ſurvive cold winters.

ATMOSPHERE [of Ἀτμὸς, a vapour, and Σφαῖρα, *Gr.* a ſphere] is an appendage of the earth, which conſiſts of a thin, fluid, elaſtic ſubſtance, called air, ſurrounding the terraqueous globe to a conſiderable height.

The whole maſs, or aſſemblage of ambient air, is commonly underſtood to be the atmoſphere.

But the more accurate writers reſtrain the term atmoſphere to that part of the air which is next to the earth, which receives the vapours and exhalations, and which is terminated by the refraction of the light of the ſun.

Thoſe ſpaces that are higher, and beyond theſe, are called æther; and, being ſuppoſed to be poſſeſſed by a finer ſubſtance, are called the æthereal regions, tho' theſe, perhaps, are not deſtitute of air.

This atmoſphere inſinuates itſelf into all the vacuities of bodies, and by that means becomes the great ſpring of moſt of the mutations here below, as generation, corruption, diſſolution of vegetables, &c. to the preſſure of the atmoſphere, plants owe their vegetation, as well as animals do their reſpiration, circulation, and nutrition.

ATRACTYLIS. Lin. Gen. Plant. 837. Diſtaff Thiſtle.

The Characters are,

It hath a radiated compound flower, compoſed of many hermaphrodite florets, which are included in a common ſcaly unarmed empalement. This hath a permanent involucrum, compoſed of ſeveral narrow plain leaves, which have ſharp ſpines on their ſides. The hermaphrodite florets which compoſe the rays, or border, are ſtretched out on one ſide like a tongue, and are ſlightly indented in five parts. Thoſe which compoſe the diſk, or middle, are funnel-ſhaped, cut at the top into five parts; theſe have both five ſlender ſtamina in each, which are ſhort, and crowned by cylindrical ſummits; in thoſe of the diſk is ſituated a ſhort crowned germen, ſupporting a ſlender ſtyle, crowned by a bifid ſtigma. The germen afterward becomes a turbinated compreſſed ſeed, crowned with a plume of down, ſhut up in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's ſeventeenth claſs, entitled Syngeneſia Polygamia Æqualis, from the florets of the border and diſk being hermaphrodite.

The Species are,

1. Atractylis (*Cancellata*) involucris cancellatis ventricoſis, linearibus dentatis calycibus ovatis, floribus floſculoſis. Lin. Sp. Plant. 830. *Diſtaff Thiſtle with a bellied netted involucrum, an oval, indented, linear empalement, and floſculous flowers.* Cnicus exiguus capite cancellato ſemine tomentoſo. Tourn. Inſt. R. H.
2. Atractylis (*Humilis*) foliis dentato-ſinuatis, flore radiato obvallato involucro patente, caule herbaceo. Lin. Sp. Plant. 829. *Diſtaff Thiſtle with ſinuated indented leaves, a radiated flower ſtrongly guarded by its ſpreading involucrum, and an herbaceous ſtalk.* Cnicus aculeatus purpureus humilior. Tourn. Inſt. R. H. 451.
3. Atractylis (*Gummifera*) flore acaule. Lin. Sp. Plant. 829. *Diſtaff Thiſtle with a flower without a ſtalk.* Cnicus Carlinæ folio acaulos gummifer aculeatus. Tourn. Cor. 33.

The firſt ſort grows naturally in Spain, Sicily, and other warm parts of Europe. This is an annual plant which ſeldom riſes more than eight or nine inches high, with a ſlender ſtem, thinly garniſhed with narrow hoary leaves, having ſpines on their edges; at the top of the ſtalk there are two or three ſlender branches ſent out, each being terminated by a head of flowers, like thoſe of the Thiſtle, with an involucrum compoſed of ſeveral narrow leaves, armed with ſpines on their ſide, which are longer than the head of flowers. The empalement is curiouſly netted over, and is narrow at the top, but ſwelling below, containing many florets of a purpliſh colour. Theſe are each ſucceeded by a ſingle downy ſeed; it flowers in July, and, if the ſeaſon be warm and dry, it will ripen its ſeeds in September, but in cold years never perfects ſeeds here.

It is propagated by ſeeds, which muſt be ſown upon an open bed of light earth, where the plants are to remain, and will require no other care but to keep them clean from weeds, and thin the plants where they come up too cloſe together.

The ſecond ſort riſes with a ſtalk near a foot high, which is garniſhed with indented leaves, having ſmall ſpines on their edges; the upper part of the ſtalk is divided into two or three ſlender branches, each ſupporting a head of purple flowers, having rays in the border, and florets in the diſk, incloſed in a ſcaly empalement. The roots of this will live two or three years; it flowers in June, but unleſs the ſummer is warm and dry, it will not perfect ſeeds in England. The ſeeds of this ſort ſhould be ſown where they are to remain, and will require no other culture than the former. It grows naturally about Madrid, from whence I received the ſeeds.

The third ſort grows naturally in Italy, and the iſlands of the Archipelago, and is what the College of Phyſicians have placed among the medicinal ſimples, by the title of Carline Thiſtle; the root of this is perennial, and ſends out many narrow leaves, which are deeply ſinuated, and armed with ſpines on their edges. Theſe lie cloſe on the ground, and between them the flower is ſituated, without ſtalk, having many florets, incloſed in a prickly empalement. Thoſe on the border are white, but thoſe which compoſe the diſk are of a yellowiſh colour. It flowers in July, but never perfects ſeeds in England.

It is propagated by ſeeds, which muſt be obtained from the countries where it grows naturally; theſe ſhould be ſown upon a border of light earth, in a warm ſituation, early in April, and when the plants come up, and are fit to tranſplant, they ſhould be thinned, and thoſe which are drawn out may be tranſplanted, leaving the other two feet aſunder; after which the only culture they require is, to keep them clean from weeds in ſummer, and in winter to cover the roots with ſome old tanners bark, to prevent the froſt from penetrating the ground.

The fourth ſort grows naturally at the Cape of Good Hope; this riſes with a ſhrubby ſtalk near three feet high, garniſhed with oblong leaves, indented on their edges, which have weak ſpines at each indenture; there are ſeveral weak branches ſent out on the ſides, each of which are terminated by a ſingle head of flowers, incloſed in a common empalement, which ſpreads open, and are of a golden colour, but are never ſucceeded by ſeeds in England. This is propagated by ſlips, taken from the flower-ſtalks in June, and planted in pots filled with light earth, and plunged into an old bed of tanners bark, where the heat is gone, and ſhaded with mats in the heat of the day, until they have taken root; after which time they may be expoſed in the open air till October, when they muſt be removed into ſhelter, and, during the winter, ſhould have little water, and in ſummer expoſed with other hardy exotic plants in a ſheltered ſituation.

ATRAPHAXIS. Lin. Gen. Plant. 405. We have no Engliſh name for this.

The CHARACTERS are,

The flower hath a permanent empalement, compoſed of two ſmall coloured leaves placed oppoſite. The flower hath two roundiſh ſinuated petals larger than the empalement, which are permanent; it hath ſix capillary ſtamina, which are the length of the empalement, crowned with roundiſh ſummits; in the center is ſituated a compreſſed germen, having no ſtyle, but crowned by two ſtigma; the germen afterward becomes a roundiſh compreſſed ſeed, ſhut up in the empalement.

This genus of plants is ranged in the ſecond ſection of Linnæus's ſixth claſs, entitled Hexandria Digynia, the flower having ſix ſtamina and two ſtigma.

The SPECIES are,

1. ATRAPHAXIS ramis ſpinoſis. Hort. Cliff. 138. *Atraphaxis with prickly branches.* Atriplex orientalis frutex aculeatus flore pulchro. Tourn. Cor. 38.
2. ATRAPHAXIS inermis. Lin. Sp. Plant. 333. *Atraphaxis without ſpines.* Arbuſcula Africana repens folio ad lateræ criſpo, ad Polygona relata. Hort. Elth. 36.

The firſt ſort grows naturally in Media, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris.

This is a ſhrub which riſes four or five feet high, ſending out many weak lateral branches, which are armed with ſpines, and garniſhed with ſmall, ſpear-ſhaped, ſmooth leaves, of an Aſh-colour. The flowers come out at the ends of the ſhoots in cluſters, each conſiſting of two white leaves tinged with purple; and are included in a two leaved empalement, of a white herbaceous colour; theſe appear in Auguſt, but the ſeeds never ripen here, ſo the plant is propagated by cuttings, and muſt be ſcreened from hard froſt, which commonly deſtroys thoſe which are planted in the open air.

The ſecond ſort ſends out many ſlender branches, which trail on the ground when they are not ſupported, garniſhed with ſmall oval leaves, about the ſize of thoſe of the Knot Graſs, waved and curled on their edges, embracing the ſtalk half round at their baſe, and are placed alternate. The flowers come out from the wings of the leaves, and have much the appearance of an apetalous flower, being compoſed of four herbaceous leaves, two of which are the empalement, the other two the petals; in the center is ſituated the compreſſed germen, attended by ſix ſtamina, but the ſeeds are never produced in this country. It flowers in June and July. This is a native of the country about the Cape of Good Hope, from whence it was brought into the gardens in Holland, and has been ſeveral years in the Engliſh gardens, where it is allowed a place more for the ſake of variety, than its beauty. It may be eaſily propagated by cuttings any time in the ſummer, and in winter the plants muſt be ſcreened from froſt.

ATRIPLEX, Orach, or Arach.

The CHARACTERS are,

It hath female and hermaphrodite flowers on the ſame plant. The hermaphrodite flowers have a permanent empalement of five oval concave leaves, with membranaceous borders; they have no petals, but five awl-ſhaped ſtamina, placed oppoſite to the leaves of the empalement, ſupporting double ſummits. In the center is placed the orbicular germen, with a ſhort bipartite ſtyle, crowned with a reflexed ſtigma. The germen afterward becomes an orbicular compreſſed ſeed, ſhut up in the five-cornered empalement. The female flowers have a two-leaved empalement, which are large, plain, erect, and pointed. They have no petals nor ſtamina, but in the center a compreſſed germen, ſupporting a bipartite ſtyle, crowned by a reflexed ſtigma. The germen afterward becomes an orbicular compreſſed ſeed, incloſed in the heart-ſhaped valves of the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's twenty-third claſs, entitled Polygamia Monœcia, the ſame plants having female and hermaphrodite flowers.

The SPECIES are,

1. ATRIPLEX caule erecto herbaceo foliis triangularibus. Hort. Cliff. 469. *Orach with an upright herbaceous ſtalk, and triangular leaves.* Atriplex hortenſis alba ſive pallidè virens. C. B. P. 119.
2. ATRIPLEX caule fruticoſo foliis deltoidibus integris. Hort. Cliff. 469. *Orach with a ſhrubby ſtalk and entire leaves, ſhaped like the Greek delta.* Atriplex latifolia ſive Halimus fruticoſus. Mor. Hiſt. p. 2. 207. *commonly called Sea Purſlane-tree.*
3. ATRIPLEX caule fruticoſo foliis obovatis. Flor. Suec. 829. *Orach with a ſhrubby ſtalk and oval leaves.* Atriplex maritima fruticoſa, Halimus & Portulaca marina dicta anguſtifolia. Raii Syn.

There are ſeveral other ſpecies of this genus, ſome of which grow naturally in England, but as they are plants of no beauty, they are rarely admitted into gardens, for which reaſon I ſhall not enumerate them here.

The firſt of theſe plants was formerly cultivated in the kitchen-gardens as a culinary herb, being uſed as Spinage, and is now, by ſome perſons, preferred to it; though, in general, it is not eſteemed amongſt the Engliſh; but the French, at preſent, cultivate this plant for uſe.

There are three or four different ſorts of this, whoſe difference is only in the colour of the plants; one of which is of a deep green, another of a dark purple, and a third with green leaves and purple borders. Theſe are ſuppoſed to be only accidental varieties which have come from the ſame ſeeds, but in forty years which I have cultivated theſe ſorts, I have never yet obſerved them to vary. But as there is no other eſſential difference, I have not enumerated them here.

Theſe plants are annual, ſo muſt be ſown for uſe early in the ſpring, or at Michaelmas, ſoon after the ſeeds are ripe; at which time it generally ſucceeds better than when it is ſown in the ſpring, and will be fit for uſe at leaſt a month earlier. Theſe plants require no other culture, but to hoe them when they are about an inch high; to cut them down where they are too thick, leaving them about four inches aſunder, and to cut down all the weeds. This muſt be done in dry weather, otherwiſe the weeds will take root again, and render the work of little or no uſe. When the plants are grown about four inches high, it will be proper to hoe them a ſecond time, in order to clear them from weeds; and, if you obſerve the plants are left too cloſe in any part, they ſhould then be cut out. If this be well performed, and in dry

weather, the ground will remain clean until the plant is fit for uſe. Where theſe plants are ſown on a rich ſoil, and allowed a good diſtance, the leaves will be very large, in which the goodneſs of the herb conſiſts. This muſt be eaten while it is young; for, when the ſtalks become tough, it is good for nothing. Some few plants of each kind may be permitted to ſtand for ſeed, to preſerve their kinds, which will ripen in Auguſt, and may then be cut, and laid on a cloth to dry; after which the ſeeds may be beaten out, and put up for uſe. The firſt ſort is ordered by the College of Phyſicians for medicinal uſe.

The ſecond ſort was formerly cultivated in gardens as a ſhrub; and, by ſome perſons, they were formed into hedges, and conſtantly ſheared, to keep them thick; but this plant is by no means fit for ſuch purpoſes, on many accounts, for it grows too vigorous; the ſhoots, in one month, at the growing ſeaſon of the year, will be two feet long, provided they have a good ſoil; ſo that a hedge of this plant cannot be kept in tolerable order, nor will it ever form a thick hedge. But a worſe inconvenience attends this plant; for, in very hard winters, it is often deſtroyed; as alſo, in very dry ſummers, many of the plants will decay, whereby there will become large gaps in the hedge.

But although this plant will not be proper for hedges, yet it may have a place in wilderneſs quarters, where it will ſerve to thicken; and the ſilver-coloured leaves will add to the variety, among other ſhrubs of the ſame growth. This will grow eight or ten feet high, and, if ſuffered to grow wild, without pruning, will ſpread ſeveral feet in compaſs, and will ſometimes produce flowers.

It may be propagated by cuttings, which may be planted in any of the ſummer months, on a ſhady border; where, if they are duly watered, they will ſoon take root, and be fit to tranſplant the Michaelmas following, when they ſhould be planted where they are to remain; for they do not ſucceed well in tranſplanting, eſpecially when they are grown pretty large and woody.

The third ſort grows wild in divers parts of England, on the ſea ſide, from whence the plants may be procured; or it may be propagated by cuttings, in the ſame manner as the former ſort. This is a low under ſhrub, ſeldom riſing above two feet and a half, or at moſt three feet high, but becomes very buſhy. The leaves of this kind are narrow, and of a whitiſh colour, but are not ſo white as thoſe of the former. This may have a place amongſt other low ſhrubs; and, if planted on a poor gravelly ſoil, will abide ſeveral years, and make a pretty diverſity.

ATROPA. Lin Gen. Plant. 222. Belladonna. Tourn. Inſt. R. H. 77. Deadly Nightſhade.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five parts; it is bell-ſhaped, the tube is ſhort, and ſwells toward the brim, where it ſpreads open, and is divided into five equal parts. It hath five awl-ſhaped ſtamina riſing from the baſe of the petal where they join, but at the top ſpread from each other, and are crowned with large ſummits which ſtand upward. In the center is ſituated an oval germen, ſupporting a ſlender ſtyle, which is crowned by an oblong tranſverſe ſtigma. The germen afterward becomes a globular berry having three cells, ſitting on the empalement, and filled with kidney-ſhaped ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, entitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. ATROPA (*Belladonna*) caule herbaceo, foliis ovatis integris. Lin. Sp. Plant. 181. *Deadly Nightſhade with an herbaceous ſtalk, and oval entire leaves.* Belladonna majoribus foliis & floribus. Tourn. Inſt. R. H. 77.
2. ATROPA (*Fruteſcens*) caule fruticoſo pedunculis confertis, foliis cordato-ovatis obtuſis. Lin. Sp. Plant. 182. *Deadly Nightſhade with a ſhrubby ſtalk, foot-ſtalks in cluſters, and oval, heart-ſhaped, obtuſe leaves.* Belladonna fruteſcens rotundifolia Hiſpanica. Tourn. Inſt. R. H. 77.
3. ATROPA (*Herbacea*) caule herbaceo, foliis ovatis nervoſis marginibus undulatis. *Deadly Nightſhade with an herbaceous ſtalk, and oval veined leaves waved on their edges.*

The firſt ſort grows wild in many parts of England, but is not very frequent near London. I have obſerved it in Woodſtock Park in Oxfordſhire, and in great abundance in Uppark in Hampſhire. This plant hath a perennial root, which ſends out ſtrong herbaceous ſtalks of a purpliſh colour, which riſe to the height of four or five feet, garniſhed with oblong entire leaves, which toward autumn change to a purpliſh colour; the flowers are large and come out between the leaves ſingly, upon long foot-ſtalks; bell-ſhaped, and of a duſky brown colour on their outſide, but are purple within. After the flower is paſt, the germen turns to a large round berry, a little flatted at the top, and is firſt green, but when ripe turns to a ſhining black, ſitting cloſe upon the empalement, and contains a purple juice of a nauſeous ſweet taſte, and full of ſmall kidney-ſhaped ſeeds. In ſome places this plant is called Dwale, but in general Deadly Nightſhade, from its quality. It is rarely admitted into gardens, nor indeed ſhould it be ſuffered to grow in any places where children reſort, for it is a ſtrong poiſon: there have been ſeveral inſtances within a few years paſt, of its deadly quality, by ſeveral children being killed with eating the berries, which are of a fine black colour, and about the ſize of a black Cherry, and not unpleaſant to the taſte.

Mr. Ray gives a good account of the various ſymptoms it produces, by what happened to a Mendicant Frier, upon his drinking a glaſs of Mallow wine, in which this plant was infuſed: in a ſhort time he became delirious, ſoon after was ſeized with a grinning laughter, after that ſeveral irregular motions, and at laſt a real madneſs ſucceeded; and ſuch a ſtupidity as thoſe that are ſottiſhly drunk have, which after all, was cured by a draught of vinegar.

There is alſo an inſtance of the direful effects of this plant recorded in Buchanan's Hiſtory of Scotland, wherein he gives an account of the deſtruction of the army of Sweno, when he invaded Scotland, by mixing a quantity of the juice of theſe berries with the drink which the Scots by their truce were to ſupply them with; which ſo intoxicated the Danes, that the Scots fell upon them in their ſleep, and killed the greateſt part of them, ſo that there were ſcarcely men enough left to carry off their king.

The ſecond riſes with a ſhrubby ſtem to the height of ſix or eight feet, and divides into many branches, garniſhed with round leaves, in ſhape like thoſe of the Storax-tree; theſe are placed alternately on the branches. The flowers come out between the leaves upon ſhort foot-ſtalks, which are ſhaped like thoſe of the former, but much leſs, of a dirty yellowiſh colour, with a few brown ſtripes; theſe are never ſucceeded by berries in England. It grows naturally in Spain, from whence the ſeeds may be procured. It is propagated by ſeeds, which ſhould be ſown in the ſpring upon a very moderate hot-bed, juſt to bring up the plants; when they are fit to remove, they ſhould be each put into a ſeparate ſmall pot, filled with loamy earth, and ſhaded until they take root; then they may be placed with other hardy exotic plants in a ſheltered ſituation, and in October they muſt be removed into the green-houſe, and treated as other plants from the ſame country. It flowers in July and Auguſt.

The ſeeds of the third ſort were ſent me from Campeachy; this hath a perennial root, which puts out ſeveral channelled herbaceous ſtalks, which riſe about two feet high; and toward the top divide into two or three ſmall branches, garniſhed with oval leaves four inches long and three broad, having ſeveral tranſverſe ribs on their under ſide, which are prominent. The flowers come out from between the leaves on ſhort foot-ſtalks; they are white, and ſhaped like

thoſe of the common ſort, but are ſmaller. It flowers in July and Auguſt, but ſeldom ripens its fruit in England. It is propagated by parting the roots in the ſpring, and the plants muſt be kept in the bark-ſtove to have them thrive well in this country.

AVENA. Lin. Gen. Plant. 85. Tourn. Inſt. R. H. 514. Oats.

The CHARACTERS are,

The flowers are collected in a looſe panicle, without beards; theſe have a bivalvular empalement, ſwelling in the middle, and pointed at both ends. The petal of the flower is bivalve, the lower valve being of the ſame ſize with the empalement, but harder, putting out from the back a ſpiral beard, twiſting, jointed, and reflexed. There are two oval nectarii ſitting upon the upper ſide of the germen, which is obtuſe, ſupporting two reflexed hairy ſtyles, crowned by two plain ſtigma; theſe are attended by three ſlender ſtamina, crowned by oblong forked ſummits. The germen afterward becomes an oblong ſwelling ſeed, pointed at both ends, having a longitudinal furrow, and cloſely ſhut up in the cover or chaff.

This genus of plants is ranged in the ſecond ſection of Linnæus's third claſs, entitled Triandria Digynia, from the flowers having three ſtamina and two ſtyles.

AVENA (*Diſpermis*) calycibus diſpermibus ſeminibus lævibus. Hort. Cliff. 25. *Oats with two ſmooth ſeeds in each empalement.* There are three ſorts of theſe Oats cultivated in England, viz. the white, the black, and the brown or red Oat, which are ſuppoſed to be only accidental varieties; but where they have been many years ſeparately cultivated, I have never obſerved them to alter. However, as their principal difference is in the colour of their grain, I ſhall not enumerate them as diſtinct ſpecies. There is alſo a naked Oat, which is ſometimes cultivated in the diſtant parts of England, but is rarely ſeen near London.

The white ſort is the moſt common about London; the black is more cultivated in the northern parts of England, and is eſteemed a very hearty food for horſes; but the firſt makes the whiteſt meal, and is chiefly cultivated where the inhabitants live much upon Oat-cakes.

The naked Oat is leſs common than either of the others, eſpecially in the ſouthern parts of England; but in the north of England, Scotland, and Wales, it is cultivated in plenty. This ſort is eſteemed, becauſe the grain threſhes clean out of the huſk, and need not be carried to the mill to be made into oat-meal or griſt. An acre of ground doth not yield ſo many buſhels of theſe, as of the common Oats, by reaſon the grain is ſmall and naked, and goes near in meaſure; but what is wanting in the meaſure, is ſupplied in value.

The red Oats are much cultivated in Derbyſhire, Staffordſhire, and Cheſhire, but are rarely ſeen in any of the counties near London; though, as they are a very hardy ſort, and give a good increaſe, they would be well worth propagating, eſpecially for all ſtrong lands.

The ſtraw of theſe Oats is of a browniſh red colour, as is alſo the grain, which is very full and heavy, and eſteemed better food for horſes than either of the former ſorts.

Oats are a very profitable grain, and abſolutely neceſſary, being the principal grain which horſes love; and are eſteemed the moſt wholſome food for thoſe cattle, being ſweet, and of an opening nature; other ſorts of grain being apt to bind, which is injurious to labouring horſes: but if you feed them with this grain ſoon after they are houſed, before they have ſweat in the mow, or are otherwiſe dried, it is as bad on the other hand, for they are then too laxative.

This grain is a great improvement to many eſtates in the north of England, Scotland, and Wales; for it will thrive on cold barren ſoils, which will produce no other ſort of grain; it will alſo thrive on the hotteſt land: in ſhort, there is no ſoil too rich or too poor for it, too hot or too cold for it; and in wet harveſts, when other grain is ſpoiled, this will receive little or no damage; the ſtraw and huſks being of ſo dry a nature, that if they are houſed wet, they will not heat in the mow, or become mouldy, as other grain uſually do; ſo is of great advantage in the northern parts of England, and in Scotland, where their harveſt is generally late, and the autumns wet.

The meal of this grain makes tolerable good bread, and is the common food of the country people in the north. In the ſouth it is eſteemed for pottage, and other meſſes, and in ſome places they make beer with this grain.

The beſt time for ſowing of Oats is in February or March, according as the ſeaſon is early or late; and ſometimes I have known it ſown in April upon cold land, and has been early ripe. The black and red Oats may be ſown a month earlier than the white, becauſe they are hardier.

Oats are often ſown on land which has the former years produced Wheat, Rye, or Barley. The common method is to plough in the ſtubble about the beginning of February, and ſow the Oats, and harrow them in; but then they muſt be harrowed the ſame way as the furrows lay, for if it be done croſſ-ways, the ſtubble will be raiſed on the ſurface; but this is not a good method of huſbandry, for when people have time to plough the ſtubble in autumn, it will rot in winter; and then giving the land another ploughing and a good harrowing juſt before the Oats are ſown, it will make the ground finer and better to receive the grain. Moſt people allow four buſhels of oats to an acre, but I am convinced three buſhels are more than enough; the uſual produce is about twenty-five buſhels to an acre, though I have ſometimes known more than thirty buſhels on an acre.

Oats are alſo ſown upon land when it is firſt broken up, before the ground is brought to a tilth for other grain, and is frequently ſown upon the ſward with one ploughing; but it is much better to give the ſward time to rot before the Oats are ſown, for the roots of the graſs will prevent thoſe of the Corn from ſtriking downward.

AVENUES are walks of trees leading to a houſe, which are generally terminated by ſome diſtant object.

Theſe were formely much more in requeſt than at preſent, there being few old ſeats in the country but have one or more of theſe avenues; and ſome have as many of them as there are views from the houſe; but of late theſe are, with good reaſon, diſuſed; for nothing can be more abſurd, than to have the ſight contracted by two or more lines of trees, which ſhut out the view of the adjacent grounds, whereby the verdure and natural beauties of the country are loſt; and where the avenues are of a conſiderable length (even where their breadth is proportionable) they appear at each end to be only narrow cuts through a wood, which never can pleaſe any perſon of real taſte; and, when the road to the houſe is through the avenue, nothing can be more diſagreeable; for in approaching to the houſe, it is like going through a narrow lane, where the objects on each ſide are ſhut out from the view; and when it is viewed from the houſe, it at beſt has only the appearance of a road, which being extended to a length in a ſtrait line, is not near ſo beautiful as a common road, which is loſt by the turnings, ſo as ſeldom to be ſeen to a great extent: but as theſe avenues muſt be made exactly ſtrait, ſo when the trees are grown to any ſize, they entirely break the view, whatever way the ſight is directed through them; and if this is in a park, the lawn of graſs through which the avenue is planted, is thereby entirely deprived of the beauty which it naturally would afford, if left open and well kept: therefore, whenever the ſituation of a houſe will admit of a large open lawn in front, the road to the houſe ſhould be carried round at a proper diſtance; and, if it be carried ſometimes through trees, and ſerpented in an eaſy natural way, it will be much more beautiful than any ſtiff formal avenue, how large ſoever made.

But

But as there may be ſome perſons ſo much wedded to the old way of laying out and planting grounds, as to prefer the avenues to the moſt beautiful diſpoſition of lawns, woods, &c. I ſhall mention the uſual methods of deſigning and planting them, that have been eſteemed the beſt.

The uſual width allowed to theſe avenues was generally as much as the whole breadth of the houſe and wings; but if they are planted twelve or fourteen feet wider, they will be the better; becauſe when the trees are grown to any conſiderable ſize, they will ſpread and overhang, ſo will contract the view.

And as for ſuch avenues to woods or proſpects, &c. they ought not to be leſs than ſixty feet in breadth; and becauſe ſuch walks are a long time before they are ſhady, it will be convenient to plant another row on each ſide, rather than to loſe the ſtateline ſs that the main walk will afford in time by being broad, where any thing of a proſpect is to be gained.

And as to the diſtance one from another, they ſhould not be planted nearer one another than thirty-five or forty feet, eſpecially if the trees are of a ſpreading kind; and the ſame diſtance, if they are for a regular grove.

As to the trees proper for planting avenues, they may be the Engliſh Elm, the Lime-tree, the Horſe Cheſnut, the common Cheſnut, the Beach, and the Abele.

The Engliſh Elm is approved for all places where it will ſucceed, and that it will do in moſt places, except in very wet or cold ſhallow grounds. 1. Becauſe it will bear cutting, heading, lopping in any manner whatſoever, and probably, with better ſucceſs than any other tree.

Secondly, the Lime-tree: this is approved by others, becauſe it will do well in any tolerable ſoil, if the bottom be not hot and gravelly; and becauſe of the regular ſhape it has in growing, the agreeableneſs of its ſhade, and the beautiful colour of its leaves.

Thirdly, the Horſe Cheſnut is alſo to be uſed in ſuch places as are very well defended from ſtrong winds; becauſe, wherever it grows freely, if it be not ſkilfully managed now and then by cutting, the branches are ſubject to ſplit down. This tree is valuable on account of its quick growth, the earlineſs of its coming out, the nobleneſs of its leaves, and the beauty of its flowers, being a fine plant both for ſhade and ornament. This delights in a ſtrong hearty ſoil, but will do well in any tolerable ground, if good care be taken in the planting of it; but wherever theſe trees are planted in avenues, they ſhould be placed thirty feet aſunder, that their heads may have room to ſpread, otherwiſe they will not appear ſo beautiful.

Fourthly, the common Cheſnut will do well in a proper ſoil, and will riſe to a conſiderable height, if planted cloſe together; but if it be planted ſingly, where the tree can take its own natural ſhape, it is rather inclined to ſpread and grow globous than tall.

Fifthly, the Beech is recommended by ſome; but this ſeldom ſucceeds well after tranſplanting, without extraordinary care; though it arrives to a very large tree in many places in England, where it grows naturally; and is the moſt tedious and troubleſome to raiſe, to any tolerable ſize, in a nurſery way.

Sixthly, the Abele: this, indeed, grows more diſperſed and looſe in its head than any of the former, and conſequently, is worſe for defence; but yet is not to be left out from the number of trees for avenues, becauſe it is the quickeſt in growth of all the foreſt trees, and will thrive tolerably well in almoſt any ſoil, and particularly in wet ground, where few of the before-mentioned trees will thrive, and this ſeldom fails in tranſplanting.

Seventhly, the Oak; but this is ſeldom uſed in planting avenues, becauſe it requires ſo long a time to raiſe it up to any tolerable ſtature in the nurſery way; nor is it apt to thrive much after it has been tranſplanted, if at any bigneſs.

As for the Alder, Aſh, Platanus, and Sycomore, they are but rarely uſed for planting avenues.

AURANTIUM [this plant is ſo called from aurum, *Lat.* gold, on account of its golden colour,] the Orange-tree.

The CHARACTERS are;

The empalement of the flower is ſmall, of one leaf, indented in five parts. The flower hath five oblong ſpreading petals, and many ſtamina, which are frequently joined in ſmall ſeparate bodies at bottom, and are crowned by oblong ſummits. In the center is ſituated the round germen, ſupporting a cylindrical ſtyle, crowned by a globular ſtigma. The germen afterward becomes a globular fleſhy fruit, compreſſed at both ends, having a thick fleſhy pulp, and divided into ſeveral cells, each containing two oval callous ſeeds.

This genus of plants, is by Dr. Linnæus joined to the Citron, to which he has alſo added the Lemon, making them only ſpecies of the ſame genus, and ranges it in his eighteenth claſs, entitled Polyadelphia Icoſandria, the flowers having more than twenty ſtamina, which are joined in ſeveral bodies.

The SPECIES are,

1. AURANTIUM (*Acri*) foliis ovato-lanceolatis glabris. *Orange-tree, with oval, ſpear-ſhaped, ſmooth leaves.* Aurantium acri medullâ vulgare. Ferr. Heſp. *The Seville Orange.*
2. AURANTIUM (*Sinenſe*) foliis lanceolatis acutis glabris. *Orange-tree, with pointed, ſpear-ſhaped, ſmooth leaves.* Aurantium Sinenſe. Ferr. Heſp. *The China Orange.*
3. AURANTIUM (*Orientale*) foliis lineari-lanceolatis glabris. *Orange-tree with narrow, ſpear-ſhaped, ſmooth leaves.* Aurantium anguſto ſalicis folio dictum. Boerh. Ind. alt. 2. 238. *Willow-leaved Orange, and by ſome called the Turkey Orange.*
4. AURANTIUM (*Decumana*) foliis ovato-lanceolatis craſſis lucidis, fructu maximo. *Orange-tree with thick, ſhining, oval, ſpear-ſhaped leaves, and a large fruit.* Aurantium fructu maximo Indiæ Orientalis. Boerh. Ind. alt. 2. 238. *The Pumpelmoes, or Shaddock.*
5. AURANTIUM (*Humile*) pumilum foliis ovatis floribus ſeſſilibus. *Dwarf Orange-tree with oval leaves, and flowers growing cloſe to the branches.* Aurantium pumilum ſub acri medullâ. Bartol. *The Dwarf, or Nutmeg Orange.*

There are many varieties of this, as there is of moſt other fruits which have ariſen from culture; but thoſe here enumerated may ſtrictly be allowed to be diſtinct ſpecies. The varieties in the Engliſh gardens are, 1. The yellow and white ſtriped-leaved Orange. 2. The curled-leaved Orange. 3. The horned Orange. 4. The double flowering Orange. And 5. The hermaphrodite Orange.

The China Orange is not ſo hardy as the Seville, therefore muſt be treated more tenderly, placing it in winter in the warmeſt part of the green-houſe, and houſing it earlier in autumn, otherwiſe the fruit will all drop from the trees. This ſort rarely produces good fruit in England, nor are the leaves of the tree near ſo large or beautiful as thoſe of the Seville Orange; therefore the latter ſhould be preferred, and only a tree or two of the China ſort kept for variety.

The Dwarf Orange is alſo tender, the leaves are very ſmall, growing in cluſters; the joints of the branches are very near each other, and the flowers of theſe grow very cloſe together, and appear like a noſegay, the branches being covered with them. This ſort, when in flower, is proper to place in a room or gallery, to adorn them; the flowers being very ſweet, will perfume the air of the place; but theſe are ſeldom to be found in good health, becauſe they muſt be treated with more care than the common Orange and Lemon-trees, as muſt alſo the Shaddock, otherwiſe the fruit will always drop off in winter. The Pumpelmoes was brought from the Eaſt-Indies by one Capt. Shaddock, from whom the inhabitants of the Weſt-Indies gave this fruit the name. But they have greatly degenerated the fruit ſince it has been in the Weſt-Indies, by raiſing the trees from ſeeds; the greateſt part of which produce harſh ſour fruit, greatly inferior to the original ſort; the fleſh or pulp of which is red, whereas the greater part of the trees in America

rica produce fruit with a pale yellow fleſh, and by conſtantly raiſing theſe trees from ſeeds, they degenerate the fruit continually; whereas, if they would bud from the good ſort, they might have it in as great plenty as they pleaſed; but there are few perſons in that part of the world who underſtand the method of grafting or budding fruit trees, and if they did, they are ſo negligent of their fruits, &c. as to leave the whole to nature, ſeldom giving themſelves any farther trouble than to put the ſeeds into the ground, and leave them to grow as nature ſhall incline.

In proof of what I have here ſaid, I cannot omit to mention, that a few years ago, I ſent two ſmall trees of the true Seville Orange to Jamaica, where this ſort was wanting; and from theſe many other trees were budded, which have produced plenty of fruit, ſome of which were ſent to England a few years paſt; and although they were long in their paſſage, yet when they arrived here, they were greatly ſuperior to any of thoſe fruit which are imported hither from Spain or Portugal, one of thoſe affording three times the quantity of juice, that a fruit of equal ſize from either of thoſe countries does.

All the ſorts of Orange-trees with ſtriped leaves are tender, therefore muſt be placed in a warm part of the green-houſe in winter, and muſt be treated with more care than the common ſort, otherwiſe they will not thrive. Theſe are varieties which ſome perſons are fond of, but they never produce good fruit, nor are the flowers produced in ſo great plenty, therefore a few only ſhould be preſerved for the ſake of variety.

The horned Orange differs from the other ſorts in the fruit dividing into parts, and the rind expanding in form of horns: this and the diſtorted Orange are preſerved by ſome curious perſons for variety, but are not ſo beautiful as the common Orange. There is alſo a great variety of ſweet Oranges both in the Eaſt and Weſt-Indies, ſome of which are much more eſteemed than thoſe we now have in Europe; but as they are much tenderer, they will not thrive in this country with the common culture; therefore I ſhall not enumerate them, but ſhall proceed to give directions for the management of Orange-trees in England.

Where the trees are to be raiſed for ſtocks to bud Oranges, you ſhould procure ſome Citron-ſeeds which were duly ripened; for the ſtocks of this kind are preferable to any other, both for quickneſs of growth, as alſo that they will take buds of either Orange, Lemon, or Citron; next to theſe are the Seville Orange ſeeds. The beſt ſeeds are uſually to be had from rotten fruits, which are commonly eaſy to be procured in the ſpring of the year; then prepare a good hot-bed, of either horſe-dung or tanners bark; the laſt of which is much the better, if you can eaſily procure it. When this bed is in a moderate temper for heat, you muſt ſow your ſeeds in pots of good rich earth, and plunge them into the hot bed; obſerving to give them water frequently, and raiſe the glaſſes in the great heat of the day, to give proper air, leſt the ſeeds ſhould ſuffer by too great heat: in three weeks time your ſeeds will come up, and if the young plants are not ſtinted, either for want of proper heat or moiſture, they will be in a month's time after their appearance, fit to tranſplant into ſingle pots: you muſt therefore renew your hot-bed, and having prepared a quantity of ſmall halfpenny pots (which are about five inches over at the top,) fill theſe half full of good freſh earth, mixed with very rotten cow-dung; and then ſhake out the young plants from the large pots, with all the earth about them, that you may the better ſeparate the plants without tearing their roots; and having half filled the pots with earth, put a ſingle plant into each of the ſmall pots; then fill them up with the ſame earth as before directed, plunging the pots into the new hot-bed, giving them a good watering to fix the earth to their roots; and obſerve to repeat the ſame very often (for this plant, when in a hot-bed, requires much water,) but be ſure to ſcreen them from the ſun in the heat of the day. In this method, with due care, your plants will grow to be two feet high by July, when you muſt begin to harden them by degrees, in raiſing your glaſſes very high, and when the weather is good, take them quite off; but do not expoſe them to the open ſun in the heat of the day, but rather take off the glaſſes, and ſhade the plants with mats, which may be taken off when the ſun declines; for the violent heat in the middle of the day would be very injurious to them, eſpecially while young. Toward the end of September you muſt houſe them, obſerving to place them near the windows of the green-houſe, to prevent the damps from moulding their tender ſhoots. During the winter ſeaſon they may be often refreſhed with water, and in March or April, waſh their heads and ſtems, to clear them from the filth that may have ſettled thereon, during their being in the houſe; and you muſt alſo give them a moderate hot-bed in the ſpring, which will greatly forward them; but harden them by the beginning of June, that they may be in right order to bud in Auguſt; when you ſhould make choice of cuttings from trees that are healthy and fruitful, of whatever kinds you pleaſe, obſerving that the ſhoots are round; the buds of theſe being much better and eaſier to part from the wood, than ſuch as are flat. When you have budded the ſtocks, you ſhould remove them into a green-houſe, to defend them from wet, turning the buds from the ſun; but let them have as much free air as poſſible, and refreſh them often with water. In a month's time after budding, you will ſee which of them has taken; you muſt then untie them, that the binding may not pinch the buds, and let them remain in the green-houſe all the winter; then in the ſpring, prepare a moderate hot-bed of tanners bark; and, after having cut off the ſtocks about three inches above the buds, plunge their pots into the hot-bed, obſerving to give them air and water, as the heat of the weather ſhall require; but be ſure to ſcreen them from the violence of the ſun during the heat of the day. In this management, if your buds ſhoot kindly, they will grow to the height of two feet or more, by the end of July; at which time you muſt begin to harden them before the cold weather comes on, that they may the better ſtand in the green-houſe the following winter. In the firſt winter after their ſhooting, you muſt keep them very warm; for, by forcing them in the bark-bed, they will be ſomewhat tenderer; but it is very neceſſary to raiſe them to their height in one ſeaſon, that their ſtems may be ſtrait: for in ſuch trees, which are two or more years growing to their heading height, the ſtems are always crooked. In the ſucceeding years, their management will be the ſame as in full grown trees, which will be hereafter treated of: I ſhall therefore, now, proceed to treat of the management of ſuch trees as are brought over every year in cheſts from Italy; which is, indeed, by much the quicker way of furniſhing a green-houſe with large trees; for thoſe which are raiſed from ſeeds in England, will not grow ſo large in their ſtems under eighteen or twenty years, as theſe are when brought over; and although their heads are ſmall when we receive them, yet in three years, with good management, they will obtain large heads and produce fruit.

In the choice of theſe trees obſerve firſt, the difference of their ſhoots and leaves (if they have any upon them) to diſtinguiſh their different ſorts, for the Shaddock and Citrons always make much ſtronger ſhoots than the Orange; for which reaſon, the Italian gardeners, who raiſe theſe trees for ſale, generally propagate thoſe ſorts, ſo that they bring few of the Seville Orange-trees over, which are much more valuable both for their flowers and fruit; alſo prefer thoſe that have two good buds in each ſtock (for many of them have but one, which will always produce an irregular head:) the ſtraitneſs of the ſtem, freſhneſs of the branches, and plumpneſs of the bark, are neceſſary obſervations.

When

When you have furniſhed yourſelf with a parcel of trees, you muſt prepare a moderate hot-bed of tanners bark, in length and breadth according to the number of trees to be forced; then put your trees into a tub of water upright, about half way of the ſtems, leaving the head and upper part of the ſtem out of the water, the better to draw and imbibe the moiſture. In this ſituation they may remain two or three days (according to their plumpneſs when you received them;) then take them out, and clean their roots from all filth, cutting off all broken or bruiſed roots, and all the ſmall fibres, which are quite dried by being ſo long out of the earth, and ſcrub the ſtems with a hard hair-bruſh, cleaning them afterwards with a cloth; then cut off the branches about ſix inches from the ſtem, and having prepared a quantity of good freſh earth, mixed with very rotten neats dung, plant your trees therein, obſerving never to put them into large pots; for if they are but big enough to contain their roots, it is ſufficient at firſt planting; and be ſure to put ſome potſherds and large ſtones in the bottom of each pot, to keep the holes at the bottom of the pots from being ſtopped with earth, that the water may freely paſs off, and wrap ſome haybands round their ſtems, from bottom to top, to prevent the ſun from drying their bark; then plunge theſe pots into the bark-bed, watering them well to ſettle the earth to their roots, frequently repeating the ſame all over their heads and ſtems, being very careful not to over-water them, eſpecially before they have made good roots; and obſerve to ſcreen the glaſſes of your hot-bed from the ſun in the heat of the day.

If your trees take to grow kindly (as there is little reaſon to doubt of, if the directions given be duly obſerved,) they will have made ſtrong ſhoots by the beginning of June; at which time you ſhould ſtop their ſhoots, to obtain lateral branches to furniſh their heads; and now you muſt give them air plentifully, and begin to harden them, that in the middle of July they may be removed into the open air, in ſome warm ſituation, defended from the great heat of the ſun, and from winds, that they may be hardened before winter. About the end of September you ſhould houſe theſe plants, ſetting them at firſt in the front of the green-houſe, near the glaſſes, keeping the windows open at all times when the weather will permit; and about the latter end of October, when you bring in the Myrtles, and other leſs tender trees, you muſt ſet your Oranges in the warmeſt and beſt part of the houſe, placing lower plants or trees in the front, to hide their ſtems. During the winter, let your waterings be frequent, but give them not too much at a time; for now their heads are but ſmall, and therefore incapable to diſcharge too great a quantity of moiſture, and take great care to guard them from froſt.

In the ſpring, when you begin to take out ſome of your hardieſt ſorts of plants to thin your houſe, waſh and cleanſe the ſtems and leaves of your Orange-trees, taking out the upper part of the earth in the pots, filling them up again with good, freſh, rich earth, laying thereon a little rotten neats dung round the outſide of the pots, but do not let it lie near the ſtem of the trees; then place them at wider diſtances in the houſe, that the air may circulate round their heads, giving them air diſcretionally, as the weather grows warm; but do not remove them into the open air until the latter end of May, that the weather is ſettled; for many times, when they are removed out too ſoon, the mornings often proving cold, give them at leaſt a great check, which will change the colour of their leaves, and many times kill the extreme weak part of the ſhoots. Let the ſituation for your Orange-trees, during the ſummer ſeaſon, be as much defended from the ſun in the heat of the day, and ſtrong winds, as poſſible, by tall trees or hedges; both of which, if they are expoſed thereto, are very hurtful to them.

As theſe trees advance, it will be neceſſary in the ſummer to ſtop ſtrong ſhoots where they grow irregularly, to force out lateral branches to fill the head; but do not pinch off the tops of all the ſhoots (as is the practice of ſome,) which will fill the tree with ſmall ſhoots too weak to ſupport fruit; but endeavour to form a regular head, and obtain ſtrong ſhoots, taking away weak trifling branches where they are too cloſe.

During the ſummer ſeaſon, your Orange-trees will require frequent waterings in dry weather, eſpecially if they are large; therefore you ſhould endeavour to have the water as near the trees as poſſible, to ſave the trouble of carrying it, which, in a large quantity of trees, takes up much time. Your water ſhould be ſoft, and expoſed to the air, but never add dung of any ſort thereto; which, although by many frequently recommended, yet has always been found deſtructive to theſe, and all other trees, if much uſed; it being like hot liquors to human bodies, which, at firſt taking, ſeem to add vigour, yet certainly leave the body weaker after ſome time than before.

Your Orange-trees will require to be ſhifted and new potted every other year, therefore you muſt prepare a quantity of good earth, at leaſt a year before you intend to uſe it, that it may be well mixed and perfectly rotten. The beſt ſeaſon for this work is about the end of April, that they may have taken freſh root before they are removed out of the green-houſe; and when this work is performed, it will be neceſſary to let them remain in the houſe a fortnight longer than uſual, to be well ſettled.

In the performing this work, after you have drawn the trees out of the pots, you muſt cut off all the roots round the outſide of the ball of earth, and take away all mouldy roots (if any ſuch be;) then with a ſharp iron inſtrument, get as much of the old earth from between the roots as poſſible, being careful not to break or tear the roots; then ſet the root of the tree into a large tub of water for about a quarter of an hour, to ſoak the under part of the ball of earth; and afterwards ſcrub the ſtems of the trees with a hard hair-bruſh, cleaning them and the heads with water, and a ſoft woollen cloth. Your pots being prepared, with ſome potſherds and large ſtones in the bottom, put ſome of your freſh earth into the pot, about three or four inches thick; and having placed your tree thereon, in the middle of the pot, upright, fill it up with the ſame rich earth, preſſing it down hard with your hands; then water the tree all over the head, with a watering-pot that has a roſe upon the ſpout, to let the water fall light and thick (as in a ſhower of rain;) and in watering theſe trees, do it in the ſame manner, during the time they abide in the houſe after ſhifting; this will greatly refreſh their heads, and promote their taking freſh roots.

When you firſt ſet theſe trees abroad after ſhifting, you ſhould place them near the ſhelter of hedges, and faſten their ſtems to ſtrong ſtakes, to prevent their being diſturbed by winds, which ſometimes will blow freſh planted trees out of the pots, if too much expoſed thereto, and thereby greatly injure their new roots.

If old Orange-trees have been ill managed, and their heads become ragged and decayed, the beſt method to reſtore them, is to cut off the greateſt part of their heads early in March, and draw them out of the tubs or pots, and ſhake off the earth from their roots, cutting away all ſmall fibres and mouldy roots; and then ſoak and clean their roots, ſtems, and branches, planting them in good earth, and ſetting them into a hot-bed of tanners bark, as was directed for ſuch trees as came from abroad, managing them in the ſame manner: by this method they will produce new heads, and in two years time become good trees again. But if theſe are large trees, and have grown in tubs for ſeveral years, your beſt way will be to prepare a parcel of rough baſkets (ſuch as are uſed for baſketing Evergreens, when ſent to a diſtant place:) let theſe be ſomewhat leſs than the tubs you deſign to plant your trees into; then plant your trees herein,

herein, plunging them into the hot-bed, and about the beginning of July, when your trees have made good ſhoots, you may remove them into the tubs, with their baſkets about them, filling the empty ſpace with the ſame good earth: this will preſerve your tubs from rotting in the bark, and the trees will do equally well as if planted into the tubs at firſt, provided you are careful in removing the baſkets, not to diſturb their roots; and alſo let them remain in the green-houſe a fortnight or three weeks after planting, before you ſet them abroad.

Theſe trees being new potted or tubbed every other year, thoſe years in which they are not ſhifted, you muſt in April obſerve to take out as much of the old earth from the tops of the pots and tubs, and alſo round the ſides of them, as poſſible, without injuring the roots of the trees, and fill them up with freſh earth; you muſt alſo waſh and clean their ſtems and leaves from filth, which will greatly ſtrengthen their flowering, and cauſe them to ſhoot vigorouſly the following ſummer.

In the management of Orange-trees which are in good health, the chief care ſhould be to ſupply them with water duly, and not (as is ſometimes practiſed) ſtarve them in winter, whereby their fibres are dried, and become mouldy, to the great prejudice of the trees; nor to give them water in too great abundance, but rather let their waterings be frequent, and given in moderate quantities. You muſt alſo obſerve, that the water has free paſſage to drain off; for if it be detained in the tubs or pots, it will rot the tender fibres of the trees. During the winter ſeaſon, they muſt have a large ſhare of air when the weather is favourable; for nothing is more injurious to theſe trees than ſtifling of them, nor ſhould they be placed too near each other in the green-houſe; but ſet them at ſuch diſtance, that their branches may be clear of each other, and that the air may circulate freely round their heads. In ſummer they ſhould be placed where the winds are not violent, and to have the morning and evening ſun; for if they are too much expoſed to the mid-day ſun, they will not thrive. The beſt ſituation for them is near ſome large plantation of trees, which will break the force of the winds, and ſcreen them from the violent heat of the ſun. In ſuch a ſituation they may remain until the beginning of October, or later, according as the ſeaſon proves favourable; for if they are carried into the green-houſe early, and the autumn ſhould prove warm, it will occaſion the trees to make freſh ſhoots, which will be weak and tender, and ſo liable to periſh in winter; and ſometimes it will occaſion their flowering in winter, which greatly weakens the trees; nor ſhould they remain ſo long abroad as to be injured by morning froſts.

The beſt compoſt for Orange-trees is two thirds of freſh earth from a good paſture, which ſhould not be too light, nor over ſtiff, but rather a hazel loam; this ſhould be taken about ten inches deep with the ſward, which ſhould be mixed with the earth to rot, and one third part of neats dung; theſe ſhould be mixed together, at leaſt twelve months before it is uſed, obſerving to turn it over every month, to mix it well, and to rot the ſward; this will alſo break the clods, and cauſe the mould to be finer. Before you make uſe of this earth, you ſhould paſs it through a rough ſcreen, to ſeparate the great ſtones and the roots of the ſward therefrom; but by no means ſift the earth too fine, for this is very prejudicial to moſt plants, but particularly to Orange-trees.

Of late years there have been many of theſe trees planted againſt walls, againſt which frames of glaſs are made to fix over them in winter; and ſome few curious perſons have planted theſe trees in the full ground, and have erected moveable covers to put over the trees in winter, which are ſo contrived as to be all taken away in ſummer: where theſe have been well executed, the trees have made great progreſs in their growth, and produced a much larger quantity of fruit, which have ripened ſo well, as to be extremely good for eating. If theſe are planted either againſt walls with deſign of training the branches to the walls, or in borders at a ſmall diſtance, ſo as to train them up as ſtandards, there ſhould be a contrivance of a fire-place or two, in proportion to the length of the wall, and flues carried the whole length of the wall, to warm the air in very cold weather, otherwiſe it will be very difficult to preſerve the trees in very hard winters alive; or, if they do live through the winter, they will be ſo much weakened by the cold, as not to be recovered the following ſummer to a proper ſtrength for bearing; ſo that wherever the trees are intended to be placed againſt or near old walls, the flues ſhould be built up againſt the front, allowing four inches thickneſs of the brick-work on each ſide the flues, obſerving to faſten this with irons, at proper diſtances, to ſecure it from ſeparating from the old wall: the manner of making theſe flues, is fully explained under the article of HOT WALLS. Where this contrivance is made, there will be no hazard of loſing the trees, be the winter ever ſo ſevere, with a little proper care; whereas, if this is wanting, there will require great care and trouble to cover and uncover the glaſſes every day, when there is any ſun; and if the wall is not thicker than they are uſually built, the froſt will penetrate through the walls in ſevere winters; ſo that covering and ſecuring the glaſſes of the front will not be ſufficient to preſerve the trees, be it done with ever ſo much care; therefore the firſt expence of the walls will ſave great trouble and charge, and be the ſecureſt method.

If the ground is wet, or of a ſtrong clay, ſo as to detain the moiſture, the borders ſhould be raiſed above the level of the ground, in proportion to the ſituation of the place; for where the wet lies in winter near the ſurface, it will greatly prejudice, if not totally deſtroy the trees; ſo that lime rubbiſh ſhould be laid at leaſt two feet thick in the bottom of the border, to drain off the wet; and the earth ſhould be laid two and a half or three feet thick thereon, which will be a ſufficient depth for the roots of the trees. In theſe borders there may be a few roots of the Guernſey and Belladonna Lilies and Hæmanthus planted, or any other exotic bulbous-rooted flowers, which do not grow high, or draw too much nouriſhment from the borders; and theſe, producing their flowers in autumn or winter, will make a good appearance, and thrive much better than if kept in pots.

The management of the Orange-trees in theſe places, is nearly the ſame as hath been directed for thoſe in pots or tubs, excepting that the borders in theſe places ſhould be dug, and refreſhed with ſome very rotten dung every year.

AURICULA MURIS, or PILOSELLA. Mouſe Ear. This is a ſort of Hawkweed with ſmall hairy leaves, which are white underneath: the plant trails upon the ground, taking root at the joints, by which means it will ſoon ſpread over a large compaſs of ground.

This is very common in England; it grows chiefly on dry barren places, or upon old walls, and is too often a troubleſome weed in graſs-plats in gardens.

AURICULA URSI [i. e. Bear's Ear, ſo called becauſe the ancients fancied it reſembled the ear of a bear.] Bear's Ear, or Auricula.

Dr. Linnæus has joined this genus to the Primula veris of Tournefort, making this one ſpecies under the title of Primula.

To enumerate the diverſities of this plant, would be almoſt endleſs and impoſſible; for every year produces vaſt quantities of new flowers, differing in ſhape, ſize, or colour of the flowers; and alſo in the leaves of theſe plants there is as great a variety, ſo that the ſkilful floriſt is oftentimes capable of diſtinguiſhing many of the particular ſorts thereby.

But as it ſeldom happens, that ſuch of theſe flowers as are at one time in great eſteem, continue to be regarded a few years after, (their being ſtill finer or larger flowers produced from ſeeds, which are what the floriſts chiefly ſeek after) it would be needleſs to mention any of them; wherefore I ſhall proceed to give the characters of a good Auricula.

1. *The ſtem of the flower ſhould be lofty and ſtrong.*
2. *The foot-ſtalk of the flower ſhould be ſhort, that the umbel may be regular and cloſe.*
3. *The pipe or neck of each flower ſhould be ſhort, and the flowers large, and regularly ſpread, being no ways inclinable to cup.*
4. *That the colours are very bright, and well mixed.*
5. *That the eye of the flower be large, round, and of a good white, or yellow; and that the tube or neck be not too wide.*

All the flowers of this kind that want any of the above-mentioned properties, are now rejected by every good floriſt; for as the varieties every year increaſe from ſeeds, the bad ones are turned out to make room for their betters; but in ſome people the paſſion for new flowers ſo much prevails, that, ſuppoſing the old flower greatly preferable to a new one, if it is of their own raiſing, the latter muſt take place of the old one.

In order to obtain good flowers from ſeeds, you muſt make choice of the beſt flowers you have, which ſhould be expoſed to the open air, that they may have the benefit of ſhowers, without which they ſeldom produce good ſeeds: the time of their ripening is in June, which you will eaſily know, by their ſeed-veſſel turning to a brown colour, and opening; you muſt therefore be careful leſt the ſeeds be ſcattered out of the veſſel, for it will not be all fit to gather at the ſame time.

The time for ſowing this ſeed is commonly in Auguſt, but if it be ſown any time before Chriſtmas, it will be time enough.

The beſt ſoil for this ſeed is good, freſh, light, ſandy mould, mixed with very rotten neats dung, or very rotten dung from the bottom of an old hot-bed: with this you ſhould fill your pots, boxes, or baſkets, in which you intend to ſow your ſeeds: and having levelled the ſurface of the earth very ſmooth, ſow your ſeeds thereon, covering it very lightly with rotten Willow mould taken out of the ſtems of decayed hollow Willow-trees; then cover the box, &c. with a net or wire, to prevent the cats, birds, &c. from ſcratching out, or burying the ſeeds too deep; for whenever this happens, the ſeeds will remain a year in the ground before the plants appear, if it ſhould grow at laſt; for which reaſon many perſons never cover theſe ſeeds, but leave them upon the ſurface of the earth, in the boxes, for the rain to waſh them into the ground, which is often the beſt method: let theſe boxes, &c. be placed ſo as to receive half the day's ſun, during the winter ſeaſon; but in the beginning of March, remove them where they may only have the morning ſun till ten of the clock; for the young plants will now ſoon begin to appear, which, if expoſed to one day's whole ſun only, will be all deſtroyed.

During the ſummer ſeaſon, in dry weather, often refreſh them with water, but never give them too great quantities at once. In the July following, your plants will be large enough to tranſplant, at which time you muſt prepare a bed, or boxes, filled with the above-mentioned ſoil, in which you may plant them about three inches ſquare; and (if in beds) you muſt ſhade them every day, till they are thoroughly rooted, as alſo in very hot dry weather; but if they are in baſkets or boxes, they may be removed to a ſhady place.

When the ſeedling Auriculas are planted in beds, there ſhould be ſome rotten neats dung laid about ten inches under the ſurface, and beaten down cloſe and ſmooth: this will prevent the worms from drawing the young plants out of the earth, which they generally do where this is not practiſed. This dung ſhould be laid about half a foot thick, which will entirely prevent the worms getting through it until the plants are well eſtabliſhed in the beds; and the roots of the Auriculas will ſtrike down into the dung by the ſpring, which will make their flowers ſtronger than uſual: theſe beds ſhould be expoſed to the eaſt, and ſcreened from the ſouth ſun.

When you have taken all your plants, which are now come up, out of your boxes or pots, level the earth gently again; for it often happens, that ſome of the ſeeds will lie in the ground two years before they appear, eſpecially if they were covered too deep when ſown, as was before obſerved.

The ſpring following many of theſe flowers will ſhew, when you may ſelect ſuch of them as have good properties, which ſhould be removed each of them into a pot of the ſame prepared earth, and preſerved until the next ſeaſon, at which time you will be capable to form a judgment of the goodneſs of the flower; but thoſe that produce plain-coloured or ſmall flowers, ſhould be taken out, and planted in borders in the out-parts of the garden, to make a ſhew, or gather for noſegays, &c. the others, which do not produce their flowers the ſame year, may be taken up, and tranſplanted into a freſh bed, to remain till you ſee how they will prove.

The manner of propagating theſe flowers when obtained, is from offſets, or ſlips, taken from the old roots in April, when the flowers are in bloom: theſe offſets muſt be planted into ſmall pots filled with the ſame ſort of earth as was before directed for the ſeedlings, and, during the ſummer ſeaſon, ſhould be ſet in a ſhady place, and muſt be often (but very gently) refreſhed with water; but in the autumn and winter ſhould be ſheltered from violent rains. The ſpring following theſe young plants will produce flowers, though but weak; ſoon after they are paſt flowering, you muſt put them into larger pots, and the ſecond year they will blow in perfection.

But, in order to obtain a fine bloom of theſe flowers, you muſt obſerve the following directions.

Firſt, Preſerve your plants from too much wet in winter, which often rots and ſpoils them; but let them have as much free open air as poſſible; nor ſhould they be too much expoſed to the ſun, which is apt to forward their budding for flower too ſoon; and the froſty mornings, which often happen in March, thereby deſtroy their buds, if they are not protected therefrom. To prevent which, thoſe who are very curious in theſe flowers, place their pots in autumn under a common hot-bed frame, where, in good weather, the plants may enjoy the full air, by drawing off the glaſſes; and in great rains, ſnow, or froſt, the plants may be ſcreened by covering them. Where this method is practiſed with judgment, the flowers will be much ſtronger, and the plants will increaſe faſter than when they are expoſed abroad.

Secondly, In the beginning of February, if the weather is mild, you muſt take off the upper part of the earth in the Auricula pots, as low as you can without diſturbing their roots, and fill up the pots with freſh rich earth, which will greatly ſtrengthen them for bloom; as alſo prepare your offſets for tranſplanting in April, by cauſing them to puſh out new roots.

Thoſe plants which have ſtrong ſingle heads, always produce the largeſt cluſters of flowers; therefore the curious floriſts pull off the offſets as ſoon as it can be done with ſafety to their growing, to encourage the mother plants to flower the ſtronger; they alſo pinch off the flowers in autumn, where they are produced, and ſuffer them not to open, that the plants ſhould not be weakened thereby.

Thirdly, You muſt cover your pots with mats in froſty weather, during this time of their budding for flower, leſt the ſharp mornings blight them, and prevent their blowing.

Fourthly, When your flower-ſtems begin to advance and the bloſſom buds grow turgid, you muſt protect them from haſty rains, which would waſh off their white meally farina, and greatly deface the beauty of their flowers; but at the ſame time obſerve to keep them as much uncovered as poſſible, otherwiſe their ſtems will be drawn up too weak to ſupport their flowers (which is often the caſe when their pots are placed near walls) give them gentle waterings to ſtrengthen them, but let none of the water fall into the center of the plant, or among the leaves.

Fifthly,

Fifthly, When your flowers begin to open, you ſhould remove their pots upon a ſtage (built with rows of ſhelves, one above another, and covered on the top, to preſerve them from wet: this ſhould be open to the morning ſun, but ſheltered from the heat of the ſun in the middle of the day:) in this poſition they will appear to much greater advantage, than when the pots ſtand upon the ground; for, their flowers being low, their beauty is hid from us; whereas, when they are advanced upon ſhelves, we ſee them in a full view. In this ſituation they may remain until the beauty of their flowers is paſt, when they muſt be ſet abroad to receive the rains, and have open free air, in order to obtain ſeeds, which will fail if they are kept too long under ſhelter. When your ſeed is ripe, obſerve to gather it when it is perfectly dry, and expoſe it to the ſun in a window upon papers, to prevent its growing mouldy, and let it remain in the pods till the ſeaſon for ſowing it.

AURICULA URSI MYCONI. See Verbascum.

AXIS of a plant. Axis is properly that round ſmooth cylinder, about which a wheel is turned; whence, by way of metaphor, that long, round, ſmooth part, placed in the center of the iuli, or cat tails, on Nut-trees, &c. about which the male organs are diſpoſed, may be called the Axis. The French call it Ame, Noyau, or Poinçon.

AZALEA. Lin. Gen. Plant. 195. American upright Honeyſuckle.

The Characters are,

It hath a ſmall coloured empalement which is permanent, cut into five acute parts at the top. The flower is funnel-ſhaped, having a long naked tube, cut into five parts; the two upper ſegments are reflexed backward, the two ſides are bent inward, and the lower one turns downward. It hath five ſlender ſtamina of unequal lengths, which have oblong erect ſummits. The round germen ſupports a long ſlender ſtyle, crowned with an obtuſe ſtigma; the germen afterward becomes a roundiſh capſule, having five cells, which are filled with roundiſh ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, entitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The Species are,

1. Azalea (*Viſcoſa*) foliis margine ſcabris, corollis piloſo glutinoſis. Lin. Sp. Plant. 151. *Azalea with leaves having rough edges, the petals of the flower hairy and glutinous.* Ciſtus Virginiana flore & odore periclymeni. Pluk. Phyt. tab. 161. f. 4.
2. Azalea (*Nudiflora*) foliis ovatis corollis piloſis ſtaminibus longiſſimis. Lin. Sp. Plant. 150. *Azalea with oval leaves, hairy flowers, and the longeſt ſtamina.* Ciſtus Virginiana periclymeni flore ampliori minus odorato. Pluk. Mant. 49.

There are three or four other ſpecies of this genus, two of which grow naturally upon the Alps, chiefly on bogs; theſe are low plants, which have little beauty, and very difficult to keep in gardens. The others grow one in the eaſt, near Pontus, and the other in India; but as neither of theſe are in the Engliſh gardens, I ſhall not enumerate them.

The firſt of theſe here mentioned, is a low ſhrub, riſing with ſeveral ſlender ſtems near four feet high. The leaves come out in cluſters at the ends of the ſhoots, without order: they are ſpear-ſhaped, but narrow at their baſe; their edges are ſet with very ſhort teeth, which are rough. The flowers come out in cluſters between the leaves, at the extremity of the branches, which are white, with a mixture of dirty yellow on their outſide: they have a tube an inch long, and at the top are pretty deeply cut into five ſegments; the two upper are reflexed, the two ſide ones are bent inward, and the lower one is turned downward. There are five ſlender ſtamina, which are a little longer than the petals of the flower, ſupporting oblong Saffron-coloured ſummits. The ſtyle is much longer than the ſtamina, and crowned by an obtuſe ſtigma. Theſe flowers have much the appearance of thoſe of the Honeyſuckle, and are as agreeably ſcented. They appear the middle of July, but are not ſucceeded by ſeeds in England.

The ſecond ſort grows taller than the firſt, and in its native country frequently riſes to the height of fifteen feet, but in England is never more than half that height. This ſends out ſeveral ſtems from the root, which are garniſhed with oblong ſmooth leaves, placed alternately, having foot-ſtalks. The flower-ſtalks ariſe from the diviſion of the branches, which are long and naked, ſupporting a cluſter of red flowers, which are tubulous, ſwelling at their baſe like thoſe of the Hyacinth, and contracted at their neck; they are divided at the top into five equal ſegments, which ſpread open. The five ſtamina and the ſtyle are much longer than the petals, and ſtand erect. This flowers about the ſame time as the former, but is not ſo well ſcented.

Theſe plants grow naturally in ſhade, and upon moiſt ground in moſt parts of North America, from whence many of the plants have been ſent of late years to England, and ſeveral of them have produced their beautiful flowers in many curious gardens.

They muſt have a moiſt ſoil and a ſhady ſituation, otherwiſe they will not thrive. They can only be propagated by ſhoots from their roots, and laying down their branches, for they do not produce ſeeds here; and if good ſeeds could be obtained, they would be difficult to raiſe, and a long time before they would flower. But when they are in a proper ſituation, their roots extend, and put out ſhoots, which may be taken off with roots, and tranſplanted. When any of them are laid down, it ſhould be only the young ſhoots of the ſame year, for the old branches will not put out roots. The beſt time for this is at Michaelmas, and if they are covered with ſome old tan, to keep out the froſt, it will be of great uſe to them. The autumn is alſo the beſt time to remove the plants, but the ground about their roots ſhould be covered in winter to keep out the froſt; and if this is every year practiſed to the old plants, it will preſerve them in vigour, and cauſe them to flower well.

AZEDARACH. See Melia.

AZEROLE, or L'AZAROLE. See Mespilus.

B.

BACCA, i. e. a berry, is a round fruit, for the moſt part ſoft, and covered with a thin ſkin, containing ſeeds in a pulpy ſubſtance; but, if it be harder, and covered with a thicker fleſh, it is called Pomum, i. e. an Apple.

BACCHARIS, Ploughman's Spikenard, vulgò.

The CHARACTERS are,

The flower is compoſed of many hermaphrodite and female florets, which are included in one common, cylindrical, ſcaly empalement. The florets are equal, the hermaphrodite and female are intermixed. The hermaphrodite florets are funnel-ſhaped and quinquefid; theſe have five ſlender ſtamina, crowned by cylindrical ſummits, and an oval germen, ſupporting a ſlender ſtyle, crowned by a bifid ſtigma. The germen afterward becomes a ſingle ſhort ſeed crowned with a long down. The female flowers have no ſtamina, but in other reſpects are the ſame.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, the flowers being compoſed of hermaphrodite and female florets, which are both fruitful.

The SPECIES are,

1. BACCHARIS (*Ivæfolia*) foliis lanceolatis longitudinaliter dentato-ſerratis. Lin. Hort. Cliff. *Ploughman's Spikenard with ſpear-ſhaped leaves, which are longitudinally indented and ſawed.* Senecio Africana arboreſcens folio ſerrato. Boerh. Ind. alt. 1. 117.
2. BACCHARIS (*Neriifolia*) foliis lanceolatis ſuperne uno alterove denticulo ſerratis. Hort. Cliff. 404. *Ploughman's Spikenard with ſpear-ſhaped leaves ſawed on the edges.* Arbuſcula foliis nerii. Boerh. Ind. 2. p. 263.
3. BACCHARIS (*Halimifolia*) foliis obovatis ſuperne emarginato-crenatis. Hort. Cliff. 405. *Ploughman's Spikenard with oval indented leaves.* Senecio Virginianus arboreſcens, atriplicis folio. Raii Hiſt. 1799.
4. BACCHARIS (*Fœtida*) foliis lanceolatis ſerrato-dentatis, corymbis folioſis. Flor. Virg. 121. *Ploughman's Spikenard with ſpear-ſhaped ſawed leaves, and a leafy corymbus.* Conyza Americana fruteſcens fœtidiſſima. Hort. Elth. tab. 89.

The Engliſh name of Ploughman's Spikenard has been always applied to the Conyza major, or greater Fleabane; but ſince moſt of the modern botaniſts have applied the title of Baccharis to this genus, I have added the old Engliſh name to it, of Ploughman's Spikenard, rather than leave it without an Engliſh title.

The firſt ſort was brought from the Cape of Good Hope, but grows naturally in Peru, and in other parts of America. This plant has been long preſerved by the curious in their gardens. It grows to the height of five or ſix feet, and is a manageable ſhrub; it may be propagated by cuttings, which ſhould be planted in a ſhady border during any of the ſummer months, or by ſeeds ſown in a common border in the ſpring of the year. Theſe ſeeds ripen well in this country; and, if permitted to ſcatter on the ground, the plants will come up the following ſpring. It is pretty hardy, and will live abroad in mild winters, if planted in a warm ſituation; but it is uſually kept in green-houſes, and placed abroad in ſummer; it requires much water in warm weather.

The ſecond ſort is alſo a native of Africa; this hath a ſoft ſhrubby ſtalk which riſes to the height of eight or ten feet, putting out ſide branches toward the top, garniſhed with ſtiff ſpear-ſhaped leaves, having a few indentures toward their top; theſe are placed without order: the flowers are produced at the extremity of the branches in a cloſe ſpike, conſiſting of female and hermaphrodite florets included in the common empalement; they are of an herbaceous colour, ſo make little appearance, and are not ſucceeded by ſeeds in England.

This plant is difficult to propagate, for the cuttings do with great difficulty take root; and it is very rare to find ſhoots near the root to lay down, ſo that in Holland they lay down the entire head of young plants, ſlitting the ſmaller branches in the ſame manner as is practiſed for Carnations, laying them into the ground and forking each down to prevent their riſing; theſe when duly watered put out roots in one year, when they may be taken off, and planted in ſmall pots filled with light earth, and placed in the ſhade till they have taken new root; after which they may be placed in a ſheltered ſituation in ſummer, but in winter muſt be kept in a green-houſe.

The third ſort is pretty common in the nurſeries about London, where it is uſually called the Groundſell-tree; this is a native of Virginia and other parts of North America; it grows to be a ſhrub of about ſeven or eight feet high, and flowers in October; the flowers are white, and not very beautiful; but the leaves continuing green through the year, has occaſioned this ſhrub to be admitted into many curious gardens.

This ſort may be propagated by cuttings, which ſhould be planted in April or May, upon a ſhady border, and duly watered in dry weather, until they have taken root; and, at Michaelmas, they will be fit to tranſplant where they are to remain; this will live in the open air, and never is injured by the cold of our ordinary winters; but ſevere froſt will ſometimes deſtroy them.

The fourth ſort grows naturally in Carolina, and ſome other parts of North America; it riſes with a ligneous ſtalk ſix or ſeven feet high, garniſhed with long ſpear-ſhaped leaves, which are hoary on their under ſide, having a diſagreeable ſcent when handled; the ſtalks are terminated by looſe umbels of flowers, which appear late in the autumn, ſo are not ſucceeded by ſeeds in this country.

It may be propagated by cuttings, which ſhould be planted toward the end of May, which if ſhaded and duly watered will put out roots in two months; when they ſhould be potted, that they may be ſheltered under a frame in winter.

BACCIFEROUS [Baccifer, *Lat.* of Bacca, a Berry, and fero, to bear] is an epithet applied to trees, ſhrubs, or plants, that bear berries, as Briony, Lily of the Valley, Aſparagus, Butchers Broom, Night-ſhade, Solomon's Seal, and many others.

BALAUSTIA. See PUNICA.

BALAUSTIUM is the cup of the flower of the wild Pomegranate.

BALLOTE [Βαλλωτὴ, *Gr.*] Black Horehound.

This is a common weed, growing on the ſides of banks in moſt parts of England, ſo is ſeldom allowed a place in gardens; there are two varieties of it, one with a white, and the other a purple flower. As theſe are not cultivated, I ſhall not trouble the reader with a farther deſcription of them.

BALM. See MELISSA.

BALSAMINA. The female Balſamine. See IMPATIENS.

BALSAMITA. See TANACETUM.

BAMIA MOSCHATA. See HIBISCUS.

BANANA. See MUSA.

BANISTERIA. Houſt. MSS. Lin. Gen. 509. Acer Scandens. Sloan. Cat. 137. Plum. Cat. 18.

The CHARACTERS are,

It hath a ſmall permanent empalement, cut into five acute ſegments to the bottom; the flower hath five petals, which are ſhaped like thoſe of the papilionaceous tribe, but ſpread open, having in ſome ſpecies one, in others two, and in ſome, ſeveral nectarious glands. It hath ten ſhort ſtamina, crowned with ſimple ſummits. There are in ſome ſpecies three, and in others but one germen, each ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma; the germen afterward become ſo many winged fruit, like thoſe of the Maple, each containing a ſingle ſeed.

The title of this genus was given by the late Dr. Houſtoun, in honour to the memory of Mr. Baniſter, a curious botaniſt, who loſt his life in the ſearch of plants in Virginia.

The Doctor ranged this genus in the claſs of papilionaceous flowers, to which it has great affinity by the form of its flower; but the ten ſtamina ſtanding ſeparate, induced Dr. Linnæus to place it in his tenth claſs; but although he has put it under his third ſection, yet it would with greater propriety come under his ſecond, the greater number of ſpecies having but two ſtyles.

The SPECIES are,

1. BANISTERIA (*Anguloſa*) foliis ovato-oblongis rigidis racemis terminalibus caule fruticoſo ſcandente. *Baniſteria with oblong, oval, ſtiff leaves, ſpikes of flowers terminating the branches, and a ſhrubby climbing ſtalk.* Sir Hans Sloane titles it, Acer ſcandens foliis Laurinis. Cat. Jam. 137.
2. BANISTERIA (*Fulgens*) foliis ovatis glabris, floribus corymboſis terminalibus, caule fruticoſo ſcandente. *Baniſteria with oval ſmooth leaves, flowers growing in a corymbus at the extremity of the branches, and a ſhrubby climbing ſtalk.* Acer ſcandens minus Apocyni facie folio ſubrotundo. Sloan. Cat. 138.
3. BANISTERIA (*Brachiata*) foliis ovatis acuminatis floribus laxè ſpicatis, ramis diffuſis ſcandentibus. *Baniſteria with oval pointed leaves, flowers growing in looſe ſpikes, and climbing diffuſed branches.* Baniſteria ſcandens & fruteſcens folio ſubrotundo, flore ex aureo Coccineo. Houſt. MSS.
4. BANISTERIA (*Laurifolia*) foliis ovatis nervoſis ſubtus incanis, floribus lateralibus, caule fruticoſo ſcandente. *Baniſteria with nervous heart-ſhaped leaves, hoary on their under ſide, flowers growing from the ſide of the branches, and a ſhrubby climbing ſtalk.* Acer Americanum ſcandens foliis ſubrotundis ſubtus pubeſcentibus. Millar. Cat.
5. BANISTERIA (*Benghalenſis*) foliis ovato-oblongis acuminatis racemis lateralibus ſeminibus patentibus. Flor. Zeyl. 176. *Baniſteria with oblong, oval, pointed leaves, ſpikes of flowers growing from the ſide of the branches, and ſpreading ſeeds.* Acer ſcandens foliis Citrei flore cæruleo ſpicato. Plum. Cat. 18.
6. BANISTERIA (*Aculeata*) foliis pinnatis, foliolis oblongis obtuſis, floribus ſpicatis caule ramoſo aculeato. *Baniſteria with winged leaves, whoſe ſmall leaves are oblong and blunt, flowers growing in a ſpike, and a prickly branching ſtalk.*
7. BANISTERIA (*Purpurea*) foliis pinnatis foliolis ovatis ſpicis lateralibus ſeminibus erectis. *Baniſteria with winged leaves, whoſe ſmall leaves are oval, ſpikes of flowers growing from the ſide of the branches, and erect ſeeds.* Baniſteria foliis ovatis ſpicis lateralibus ſeminibus erectis. Lin. Sp. Plant. 427.

The firſt grows naturally in Jamaica. This hath a woody ſtalk, which twiſts itſelf round the neighbouring trees, and riſes to their top. It is garniſhed with leaves as large as thoſe of the Bay-tree, and of the ſame thickneſs, growing oppoſite; the flowers are produced in long branching ſpikes at the ends of the branches, which are yellow, compoſed of five ſmall leaves; theſe are ſucceeded by two or three winged ſeeds like thoſe of the greater Maple.

The ſecond ſort grows naturally in Jamaica, at Campeachy, and ſeveral other parts of America. This hath ſlender winding ſtalks, which riſe five or ſix feet high, and are thinly garniſhed with oval ſmooth leaves; the flowers grow in a round bunch at the extremity of the branches, which are of a browniſh yellow colour, and are ſucceeded by winged ſeeds like the former, but ſmaller, and have narrower wings.

The third ſort was ſent me from Carthagena, where it naturally grows. This ſends out many branches, which divide again into others, growing without order, and become very buſhy upward, ſending out tendrils by which they faſten themſelves to the neighbouring trees, and mount to a great height; theſe are garniſhed with oval ſtiff leaves, ending in a point. The flowers are produced in looſe ſpikes at the ends of the branches, which are firſt of a gold colour, and fade to a ſcarlet. Theſe are ſucceeded by ſeeds of the ſame ſhape with the former, but are ſlender, thin, and for the moſt part ſingle.

The fourth ſort was ſent me from Campeachy, by Mr. Robert Millar; this hath many irregular climbing ſtalks, which faſten themſelves to the neighbouring trees, and riſe to a great height, garniſhed with oval leaves, which are hairy on their under ſide, where they have many tranſverſe ribs. The flowers come out thinly from the ſide of the branches, which are of a pale yellow colour, and are ſucceeded by large winged ſeeds, which are double.

The fifth ſort hath ſtrong woody ſtalks, which twine about the trees which grow near it, and riſes twenty feet high, garniſhed with oblong pointed leaves like thoſe of the Bay-tree, growing oppoſite; from the wings of the leaves the flowers are produced in looſe ſpikes, upon long foot-ſtalks, which are blue, and are ſucceeded by ſlender winged ſeeds, which ſpread open from each other.

The ſixth ſort was ſent me from Tolu in New Spain, where it grows naturally. This hath climbing ſtalks, which divide into many branches, garniſhed with long winged leaves, compoſed of about twenty pair of ſmall, oblong, blunt pinnæ, each having a deep furrow on the under ſide. At the wings of the leaves the ſtalks are armed with ſhort ſtrong ſpines, a little crooked. The flowers grow in long looſe ſpikes at the end of the branches, which are ſucceeded by ſingle ſeeds, as large as thoſe of the greater Maple.

The ſeventh ſort hath ſtrong ligneous ſtalks, covered with an Aſh-coloured bark, and divide into many branches, garniſhed with winged leaves, compoſed of five or ſix pair of oval ſmall leaves, nearly of the ſize with thoſe of the common Acacia, but are whitiſh on their under ſide; from the wings of the leaves are produced ſlender bunches of flowers, growing in a racemus like thoſe of the Currant-buſh, of a purpliſh colour; theſe are ſucceeded by broad winged ſeeds, growing erect. It was ſent me from Campeachy, where it grows naturally.

Theſe plants are all of them natives of warm countries, ſo cannot be preſerved in England, unleſs they are kept in a bark-ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally. Theſe ſeeds ſhould be fully ripe when gathered, and put into ſand or earth, in which they ſhould be ſent to England, otherwiſe they will looſe their vegetative quality; for from a large parcel of theſe ſeeds which were ſent over in papers, as freſh as they could poſſibly arrive here, there was very few plants raiſed, and thoſe did not appear till the ſecond year; for theſe ſeeds are not only in ſhape like thoſe of the Maple, but alſo are of the ſame quality, requiring to be ſown as ſoon as poſſible when they are ripe, or preſerved in ſand or earth till they are ſown, otherwiſe they rarely ſucceed; therefore when the ſeeds arrive, they ſhould be immediately ſown in pots, and, if it happens in autumn or winter, the pots ſhould be plunged into a hot-bed of tanners bark, where the heat is very moderate, and ſecured from froſt and wet, till ſpring, when they muſt be removed to a freſh hot-bed, which will bring up the plants; but if they ſhould not appear the firſt year, the pots ſhould be preſerved till the next ſpring,

to ſee if the ſeeds will grow. When the plants come up, they muſt be planted in ſeparate pots, filled with light earth, and plunged into the bark-bed, after which they muſt be treated like other tender plants from the ſame countries.

BAOBOB. See ADANSONIA.

BARBA CAPRÆ. See SPIRÆA.

BARBA JOVIS. See ANTHYLLIS.

BARBAREA. See ERYSIMUM.

BARDANA. See ARCTIUM.

BARLERIA.

The name was given to this genus of plants by father Plumier, in honour of Jacobus Barelier, of Paris, who was a famous botaniſt.

The CHARACTERS are,

It hath a permanent empalement, divided into four parts, two large and two ſmaller, oppoſite. The flower is of the lip kind, of one leaf, funnel-ſhaped, and divided into five parts at the top; the upper ſegment being broad and erect, the two ſide ones narrower, and the under one which turns downward is divided into two. It hath four ſlender ſtamina, two of which are very ſhort; the two upper are longer, crowned by oblong ſummits. In the center is placed the oval germen, ſupporting a ſlender ſtyle, crowned by a bifid ſtigma. The germen afterward becomes an oblong, quadrangular, membranaceous veſſel, with two cells, which is very elaſtic, containing two or three roundiſh compreſſed ſeeds.

This genus of plants is by Dr. Linnæus ranged in the ſecond order of his fourteenth claſs, titled Didynamia Angioſpermia, whoſe flowers have two long and two ſhort ſtamina, and their ſeeds are included in a capſule.

The SPECIES are,

1. BARLERIA (*Solanifolia*) ſpinis axillaribus foliis lanceolatis denticulatis. Lin. Sp. 887. *Barleria with ſpines on the ſide of the branches, and ſpear-ſhaped indented leaves.* Barleria aculeata ſolani folio anguſtiore flore cæruleo. Plum. N. G. 31.
2. BARLERIA (*Prionitis*) ſpinis axillaribus quaternis foliis integerrimis. Lin. Sp. Plant. 636. *Barleria with ſpines growing by fours from the ſide of the branches, and entire leaves.* Coletta-veetla. Hort. Mal. 9. p. 77.
3. BARLERIA (*Buxifolia*) ſpinis axillaribus oppoſitis ſolitaris, foliis ſubrotundis integerrimis. Lin. Sp. 887. *Barleria with ſpines at the wings of the ſtalk, and roundiſh entire leaves.* Barleria Americana ſpinoſſima fruteſcens, buxi folio parvo flore. Amm. Herb. 104.
4. BARLERIA (*Coccinea*) inermis foliis ovatis denticulatis petiolatis. Lin. Sp. 888. *Barleria without ſpines, and oval indented leaves having foot-ſtalks.* Barleria ſolani folio, flore coccineo. Plum. Nov. Gen. 31.

The firſt ſort riſes with upright ſquare ſtalks three feet high, garniſhed with two oblong entire leaves at every joint; above which the flowers come out in whorls ſurrounding the ſtalks, and under each whorl there are ſix ſharp ſpines, which are as long as the empalement of the flowers. Theſe joints are about three inches diſtance; the flowers are blue, and have more of the form of the labiated flowers, than any of the other ſpecies. I received this from Panama.

The ſecond ſort has been long in the curious gardens in Holland, but has not been many years in this country. This ſends out many ſlender ſtems from the root, which riſe eight or nine feet high, garniſhed with oval pointed leaves, two growing oppoſite at each joint, which are attended by four long ſpines ſtanding croſs-ways. This plant hath not as yet flowered in England, though there are large plants of it in the Chelſea garden.

The third ſort hath ſhrubby ſtalks which riſe five or ſix feet high, garniſhed with roundiſh entire leaves placed oppoſite, under which are placed ſtrong ſpines; the flowers are produced in whorls toward the upper part of the ſtalk; theſe are ſucceeded by ſhort ſeed-veſſels, containing three or four flat ſeeds. This grows naturally in Jamaica.

The fourth ſort grows naturally in the warm parts of America. The ſtalks of this are ſmooth; they riſe four feet high, are garniſhed with two oval indented leaves ſtanding oppoſite; the flowers are ſcarlet, and are placed in whorls at the joints of the ſtalks; theſe appear in July, Auguſt, and September, and are ſucceeded by ſhort pods incloſing flat ſeeds.

The roots of the firſt ſort will continue three or four years, but after the ſecond year, the plants grow too rambling, and the lower part of the branches are naked, ſo are not ſo ſightly as the young plants; therefore a ſucceſſion of theſe ſhould be raiſed, and the old ones turned out. They are propagated by ſeeds, which will ſow themſelves in the pots which are near them in the ſtove, when the plants are once obtained; but where the ſeeds are received from abroad, they muſt be ſown upon a hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted in a ſeparate pot, and plunged into a hot-bed of tanners bark, where they muſt conſtantly remain, and managed in the ſame manner as other tender exotics from the ſame countries; giving them water frequently in ſummer, and letting the freſh air to them every day in warm weather, but in winter they ſhould have leſs water and be kept warm. They flower from June to November, and their ſeeds ripen ſoon after.

The ſecond ſort hath flexible perennial ſtalks, which if cut off during the ſummer months, and made into lengths of ſix or eight inches, and planted in pots, plunging them into a hot-bed, and duly watered and ſhaded from the ſun, will ſoon put out roots, ſo may be planted each in a ſmall pot, and plunged into the tan-bed in the ſtove; for although this ſort may be kept in a dry ſtove through the winter, yet the plants will not grow near ſo faſt, nor will their leaves be ſo large as thoſe which are plunged into bark. By this method the plants may be propagated in plenty, but as they rarely produce flowers in England, ſo two or three plants will be ſufficient to maintain the ſpecies.

The third and fourth ſorts will produce ſeeds in England, provided the plants are kept in the tan-bed in the ſtove, ſo theſe may be propagated by ſeeds, which ſhould be ſown in the hot-bed, and the plants afterward treated in the ſame manner as the firſt ſort.

BAROMETER [from Βάρος, a weight, and μέτρον, a meaſure,] is an inſtrument or machine for meaſuring the weight of the atmoſphere, or the minute variation of the weight or preſſure of the incumbent air, in order to determine the changes of weather.

This machine is founded on the Torricellian experiment, ſo called, from the inventor Torricellius.

1. It conſiſts of a long tube of glaſs, hermetically ſealed at one end; and being filled with quickſilver, is inverted ſo as to have one end of it immerged in a baſon of ſtagnant quickſilver, and the other hermetically ſealed, which is expoſed to the preſſure of the outward air; out of which open end (after ſuch immerſion) the quickſilver in the tube being ſuffered to run as much as it will into the ſtagnant quickſilver, in which that mouth or open end is immerſed, there is wont to remain a cylinder of quickſilver ſuſpended in the tube, about twenty-eight, twenty-nine, or thirty inches high, meaſuring from the ſurface of the ſtagnant quickſilver perpendicularly; but more or leſs within ſuch limits, according as the weight or preſſure of the air incumbent on the external ſtagnant quickſilver expoſed to it, is greater or leſſer, leaving the upper part of the tube void, or at leaſt empty of common air.

The phænomena of the barometer are various, and the cauſes aſſigned for them, by ſeveral authors, as various; nor is the uſe of it in predicting the weather, yet perfectly aſcertained.

The greateſt height the mercury has been known to ſtand at in London, is thirty inches three-eighths, and its leaſt, twenty-eight inches: and though, as Mr. Boyle obſerves, the phænomena of the barometer are ſo very precarious, that it is very difficult to form any general rules about the riſe and fall thereof, ſince in

in that which ſeems to hold moſt univerſally, viz. that when the high winds blow, the mercury is the lower, they ſometimes fail, yet the following obſervations have been made by ſeveral authors.

Dr. Halley obſerves, that in calm weather, when the air is inclined to rain, the mercury is continually low; in ſerene good ſettled weather, high.

That on great winds, though unaccompanied with rain, the mercury is loweſt of all, with regard to the point of the compaſs the wind blows on; that, *cæteris paribus*, the greateſt heights of the mercury are on eaſterly and north-eaſterly winds; that after great ſtorms of wind, when the mercury has been low, it riſes again very faſt.

That in calm froſty weather it ſtands high.

That the more northerly places find greater alterations than the more ſouthern; and that within the tropics, and near them, there is little or no variation of the mercury at all.

Dr. Beal obſerves, that, *cæteris paribus*, the mercury is higher in cold weather than in warm, and uſually higher in morning and evening than at mid-day.

That the mercury is higher in ſettled and fair weather, than either a little before, or after, or in the rain; and that it generally deſcends lower after rain, than it was before it; if it chance to riſe higher after rain, it is generally followed by a ſettled ſerenity.

That there are frequently great changes in the air, without any perceptible alterations in the barometer.

As to the predictions from the barometer, Dr. Halley has found,

That the riſing of the mercury forebodes fair weather after foul, and an eaſterly or north-eaſterly wind.

That the falling of the mercury portends ſoutherly or weſterly winds, with rains, or ſtormy winds, or both.

That in a ſtorm the mercury beginning to riſe, is a pretty ſure ſign that it begins to abate.

Mr. Patrick obſerves, that the falling of the mercury in hot weather preſages thunder; that when foul weather happens after the fall of the mercury, it ſeldom holds long; and the ſame is obſerved, if fair weather ſucceeds preſently after its riſe.

Hence Mr. Pointer conceives, that the principal cauſe of the riſe and fall of the mercury, is from the variable winds which are found in the temperate zones, and whoſe great inconſtancy here in England is moſt notorious.

A ſecond cauſe he takes to be, the uncertain exhalation and perſpiration of the vapours lodging in the air, whereby it comes to be at one time much more crowded than at another, and conſequently heavier; but this latter, in a great meaſure, depends upon the former.

And from theſe principles, he endeavours to explain the ſeveral phænomena of the barometer.

1. The mercury's being low, inclines it to rain; becauſe the air being light, the vapours are no longer ſupported thereby, being become ſpecifically heavier than the medium wherein they are floated; ſo that they deſcend towards the earth, and in their fall, meeting with other aqueous particles, they incorporate together, and form little drops of rain; but the mercury's being at one time lower than another, is the effect of two contrary winds blowing from the place where the barometer ſtands, whereby the air of that place is carried both ways from it, and conſequently the incumbent cylinder of air is diminiſhed, and accordingly the mercury ſinks. As for inſtance, if in the German ocean it ſhould blow a gale of weſterly wind, and at the ſame time an eaſterly wind in the Iriſh ſea; or if in France it ſhould blow a northerly wind, and in Scotland a ſoutherly, it muſt be granted, that that part of the atmoſphere impendent over England, would thereby be exhauſted and attenuated, and the mercury would ſubſide; and the vapours which before floated in thoſe parts of the air, of equal gravity with themſelves, would ſink to the earth.

2. The greater height of the barometer is occaſioned by two contrary winds blowing towards the place of obſervation, whereby the air of other places is brought thither and accumulated; ſo that the incumbent cylinder of air being increaſed both in height and weight, the mercury preſſed thereby muſt needs riſe and ſtand high, as long as the winds continue ſo to blow; and then the air being ſpecifically heavier, the vapours are better kept ſuſpended, ſo that they have no inclination to precipitate and fall down in drops, which is the reaſon of the ſerene good weather, which attends the greater heights of the mercury.

3. The mercury ſinks the loweſt of all by the very rapid motion of the air in ſtorms of winds.

For the tract of the region of the earth's ſurface, wherein theſe winds rage, not extending all round the globe, that ſtagnant air which is left behind, as likewiſe that on the ſides, cannot come in ſo faſt as to ſupply the evacuation made by ſo ſwift a current; ſo that the air muſt neceſſarily be attenuated when and where the ſaid winds continue to blow, and that more or leſs, according to their violence: add to which, that the horizontal motion of the air being ſo quick as it is, may, in all probability, take off ſome part of the perpendicular preſſure thereof; and the great agitation of its particles is the reaſon why the vapours are diſſipated, and do not condenſe into drops, ſo as to form rain, otherwiſe the natural conſequence of the air's rarefaction.

4. The mercury ſtands the higheſt upon an eaſterly or north-eaſterly wind; becauſe, in the great Atlantic ocean, on this ſide the thirty-fifth degree of north latitude, the weſterly and ſouth-weſterly winds blow almoſt always trade: ſo that whenever here the winds come up at eaſt and north-eaſt, it is ſure to be checked by a contrary gale as ſoon as it reaches the ocean: wherefore, according to what is made out in the ſecond remark, the air muſt needs be heaped over this iſland, and conſequently, the mercury muſt ſtand high, as often as theſe winds blow.

5. In calm froſty weather, the mercury generally ſtands high, becauſe, as he conceives, it ſeldom freezes but when the winds come out of the northern or north-eaſtern quarters, or at leaſt, unleſs thoſe winds blow at no great diſtance off.

For the northern parts of Germany, Denmark, Sweden, Norway, and all that tract, from whence north-eaſtern winds come, are ſubject to almoſt continual froſt all the winter, and thereby the lower air is very much condenſed, and in that ſtate is brought hitherward by thoſe winds; and, being accumulated by the oppoſition of the weſterly wind blowing in the ocean, the mercury muſt needs be preſſed to a more ordinary height; and, as a concurring cauſe, the ſhrinking of the lower parts of the air into leſſer room by cold, muſt needs cauſe a deſcent of the upper parts of the atmoſphere, to reduce the cavity made by this contraction to an equilibrium.

6. After great ſtorms of winds, when the mercury has been very low, it generally riſes again very faſt: he ſays, he once obſerved it to riſe an inch and a half in leſs than ſix hours, after a long continued ſtorm of ſouth-weſt wind.

The reaſon is, becauſe the air being very much rarefied by the great evacuations that ſuch continued ſtorms make thereof, the neighbouring air runs in more ſwiftly, to bring it to an equilibrium, as we ſee water runs the faſter for having a greater declivity.

7. The variations are greater in the more northerly places, as at Stockholm greater than at Paris [compared by Mr. Paſchal;] becauſe the more northerly parts have uſually greater ſtorms of wind than the more ſoutherly, whereby the mercury ſhould ſink lower in that extreme; and then the northerly winds bringing the condenſed and ponderous air from the neighbourhood of the pole, and that again being checked by a ſoutherly wind, at no great diſtance, and ſo heaped up, muſt of neceſſity, make the mercury in ſuch caſe ſtand higher in the other extreme.

8. This remark, that there is little or no variation near the equinoctial, does, above all others, confirm

the hypotheſis of the variable winds being the cauſe of theſe variations of the height of the mercury; for in the places above-named, there is always an eaſy gale of wind, blowing nearly upon the ſame point, viz. E. N. E. at Barbadoes, and E. S. E. at St. Helena; ſo that there being no contrary currents of the air to exhauſt or accumulate it, the atmoſphere continues much in the ſame ſtate.

Mr. Patrick gives us the following rules and obſervations for the riſing and falling of the mercury, in order to foreknow the weather by the barometer.

1. It has been obſerved, that the motion of the mercury does not exceed three inches in its riſing or falling in the barometer of the common form.
2. That its leaſt alterations are to be minded, in order to the right finding of the weather by it.
3. The riſing of the mercury preſages in general fair weather, and its falling, foul, as rain, ſnow, high winds, and ſtorms.
4. In very hot weather, the falling of the mercury foreſhews thunder.
5. In winter, the riſing of the mercury preſages froſt; and in froſty weather, if the mercury falls three or four degrees, there will certainly follow a thaw; but if the mercury riſes in a continued froſt, it will certainly ſnow.
6. When foul weather happens ſoon after the falling of the mercury, you may expect but little of it; and you may judge the ſame, when the weather proves fair ſhortly after the mercury has riſen.
7. When the mercury riſes much and high in foul weather, and continues ſo for two or three days before the foul weather is over, you may expect a continuance of fair weather to follow.
8. When the mercury falls much and low in fair weather, and continues ſo for two or three days before the rain comes, then you may expect a great deal of wet, and probably high winds.
9. The unſettled motion of the mercury denotes uncertain and changeable weather.
10. You are not ſo ſtrictly to mind the words engraven on the plates, though for the moſt part they will agree with them, as the riſing and falling of the mercury; for if it ſtands at much rain, and riſes up to changeable, it preſages fair weather, although not to continue ſo long as it would have done, if the mercury were higher, and ſo on the contrary.

Theſe rules and obſervations are ſufficient to inſtruct perſons who are unacquainted with this inſtrument, how to make their obſervations; and with conſtantly remarking what alterations happen in the weather on the variations of the mercury, a perſon may nearly predict the great alterations of the weather a day or two before they happen, which is frequently of great uſe to the gardener and farmer, but particularly to the latter, who may begin to mow his graſs when he finds there is a proſpect of fair weather, or poſtpone it a few days until he foreſees a likelihood of ſuch. The ſame alſo may be of great moment in reaping his corn, as alſo in ſowing his grain, and moſt of his other buſineſs. Therefore the uſe of this inſtrument ſhould be more generally known by the practical farmer and gardener.

BARTRAMIA. See TRIUMFETTA.

BASELLA, or climbing Nightſhade from Malabar.

The CHARACTERS are,

The flower hath no empalement; it is ſhaped like a pitcher, fleſhy at the baſe and ſwelling, but cloſed toward the brim, where it is divided into ſix parts, two of which are larger than the others. It hath five awl-ſhaped ſtamina, which are equal, faſtened to the petal, crowned with roundiſh ſummits. The globular germen, which is ſituated in the center, ſupports three ſlender ſtyles, crowned by oblong ſtigma. The petal of the flower remains, and incloſes a roundiſh fleſhy berry, including one round ſeed.

This genus of plants is ranged in the third ſection of Linnæus's fifth claſs, entitled Pentandria Trigynia, the flower having five ſtamina and three ſtyles.

The SPECIES are,

1. BASELLA (*Rubra*) foliis planis, pedunculis ſimplicibus. Lin. Sp. 390. *Baſella with plain leaves and ſimple foot-ſtalks.* Cuſcuta foliis ſubcordatis. Hort. Cliff. 39. *Climbing Nightſhade.*
2. BASELLA (*Alba*) foliis ovatis undatis, pedunculis ſimplicibus folio longioribus. Lin. Sp. 390. *Baſella with oval waved leaves, and foot-ſtalks longer than the leaf.* Baſella Sinica, foliis & caulibus viridibus minùs ſucculentibus fructu minore. Juſſ.

The firſt ſort has thick, ſtrong, ſucculent ſtalks and leaves, which are of a deep purple colour. The plant requires to be ſupported, for it will climb to the height of eight or ten feet, when the plants are kept in a ſtove or glaſs-caſe, and produce a great number of ſide branches: but if they are expoſed to the open air, they will not grow ſo large, nor will they perfect their ſeeds, except it be in very warm ſeaſons; when they are placed in the bark-ſtove, they will often live through the winter, and produce great quantities of flowers and ſeeds. The flowers of this plant have no great beauty, but the plant is preſerved for the odd appearance of the ſtalks and leaves.

The ſeeds of the ſecond ſort I received from Dr. Juſſieu of Paris, from whence I have obtained two varieties; one of which hath purple ſtalks and leaves, and the other hath leaves variegated with white; but both of them retain their ſmall ſtalks, and oblong flaccid leaves, ſmaller flowers and fruit, in which they eſſentially differ from the firſt.

Theſe plants are propagated by ſeeds, which ſhould be ſown in a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each planted into a ſeparate pot filled with rich earth, and plunged into the tan-bed, where they muſt be treated in the ſame manner as other tender exotics. They may alſo be propagated by cuttings, which ſhould be laid to dry a day or two after they are taken from the plants, before they are planted, that the wound may heal, otherwiſe they will rot. Theſe cuttings muſt be planted into pots filled with light freſh earth, and plunged into a moderate hot-bed of tanners bark, where they will take root in a fortnight or three weeks time, when they ſhould be treated in the ſame manner as the ſeedling plants. But as theſe riſe ſo eaſily from ſeeds, it is ſeldom they are propagated any other way, becauſe they are plants of ſhort duration. Theſe flower from June to autumn, and the ſeeds ripen in September and December.

Theſe plants will climb to a conſiderable height, and ſend forth a great number of branches, ſo that they ſhould have a place near the back of the ſtove, where they may be trained up to a trelliſe, or faſtened to the back of the ſtove, otherwiſe they will twiſt themſelves about whatever plants ſtand near them, and be very injurious to the other plants; whereas, when they are regularly trained to a trelliſe, they will have a good effect in adding to the variety.

From the berries of the firſt ſort, I have ſeen a beautiful colour drawn, but when uſed for painting, did not continue very long, but changed to a pale colour; though I believe there might be a method invented, whereby this beautiful colour might be fixed, ſo as to become very uſeful; for I have been aſſured, that the juice of theſe berries has been uſed for ſtaining of callicoes in India.

BASILICUM, or BASIL. See OCYMUM.

BASONS or fountains, &c. which ſerve either for the ornament or uſe of gardens, are made in divers forms, ſome round, ſome oblong or oval, others ſquare, octangular, &c. but their moſt common form is circular; and, if the ground will permit, the larger they are the better; and when they exceed in ſize, they are called pieces of water, canals, fiſh ponds, pools, and reſervoirs.

In making theſe, care ought to be taken to avoid both the extremes, and not to make them either too big or too little, that a water work may not take up the beſt part of a ſmall ſpot of ground; nor to make too little a baſon in a large ſpot. This muſt depend entirely on the judgment of the deſigner of the garden.

Some would have the ſize of a baſon to be proportioned to the Jet d' Eau, that the water thrown up in the air, may not, by being blown by the air, be carried beyond the edge of the baſon, but all fall down without wetting the walk.

As to the depth of baſons it is uſually from two to three feet, this depth being ſufficient to ſecure the bottom of the baſons from froſt, and to dip watering pots.

But if they are to ſerve for reſervoirs, or to keep fiſh in, then they may be made four or five feet deep, which will both hold water enough, and be deep enough for the fiſh to breed in, and alſo to bear a boat.

Deeper than this they need not be, and if they were deeper, they would be dangerous as to the drowning of perſons who might chance to fall in.

In making baſons, great care ought to be taken in making them at firſt; for the water always naturally endeavouring to run away, and by its weight and preſſure in a baſon, making its way out at the leaſt cranny, it will grow conſtantly bigger and bigger; ſo that if it be not well made at firſt, it will be very difficult to repair it.

Baſons are made either with clay, cement, or lead; they are moſt uſually made of clay; in making ſuch, at the marking out the dimenſions, the diameter ought to be four feet bigger on each ſide, yet the baſon will not be the wider, for it will be taken up with the walls on each ſide; and the clay-work, which is to fill the ſpace between; the baſon muſt alſo be dug two feet deeper than the depth of the water is deſigned to be, becauſe it is to be laid over eighteen inches thick with clay, and ſix inches with gravel and paving.

The clay ought to be well wrought with the hands and water, and when it is ſpread, ſhould be trodden in with the naked feet, that the water of the baſon may not dilute through it, and the roots of any trees that may grow near, may not penetrate into the outward wall, which may be made of ſhards, rubble, or flints, with mortar made of the natural earth, and is called the ground wall, becauſe it is only made to reſiſt the preſſure of the ground about it. The inward wall ought to be made with good rubble ſtones that will not ſcale and come off in flaſhes in the water, or elſe of flints and ſtones from the hills, which will make durable work, but will not look ſo neat as the pointed rubble; and there ought to be laid here and there ſtones, the thickneſs of the wall, to render it the more ſubſtantial.

The method of making baſons of cement is as follows: after you have marked out the dimenſions of the baſon, as before, if you enlarge it one foot nine inches, it will be ſufficient, and the ſame depth deeper at the bottom will be enough.

This being done, you muſt begin to back up and raiſe againſt the ground; cut perpendicularly a wall of maſonry a foot thick, which muſt go to the bottom, and ſhould be built with ſhards and rubble ſtones laid in mortar of lime and ſand.

When the wall is finiſhed round the circumference, then the bottom is to be wrought a foot thick with the ſame materials; and the ſolid work or lining of cement is to be backed up againſt the walls nine inches thick, including the plaſtering and inward ſurface. This ſolid ought to be made of ſmall flints, laid in beds of mortar made of lime and cement.

When this ſolid is eight inches thick, it ought to be plaſtered over the whole ſurface of the bottom with cement well ſifted before it be tempered with lime; and with this it ſhould be wrought over ſmooth with the trowel.

The proportion of this cement ſhould be two thirds of cement or powdered tile to one third of lime.

This cement has the property to harden ſo under water, that it will be as hard as ſtone or marble, and the body will be ſo ſolid as never to decay.

After the finiſhing of the baſon, the plaſtering ſhould be for four or five days ſucceſſively anointed over with oil, or bullock's blood, to prevent it from cracking or flawing; this being done, the water ſhould be let into the baſon as ſoon as may be.

Thoſe baſons which are made of lead, are to be thus wrought; the outlines ought to be enlarged one foot of a ſide, and digged half a foot deeper than the baſon is to be.

The wall muſt be made a foot thick, that it may be able to bear up againſt the earth lying againſt it; but the bottom will not require to be more than half a foot thick.

Theſe walls muſt be built in rubble laid in mortar all of plaſter, becauſe the lime will eat the lead, and then the lead muſt be laid on the walls and bottom, and be ſeamed with ſolder.

But baſons of lead are not much in uſe, becauſe of their great charge in making, and the danger of the lead being ſtolen.

Great care ought to be taken to keep the upper edge and ſuperficies of a baſon upon a level, that the water may cover all the walls equally.

As to the waſte pipes of baſons, whether at the bottom or ſuperficies, they ought not to be made too ſmall, leſt they ſhould be choked, notwithſtanding the cawls that are drawn before them.

When this waſte water is only to be loſt in ſinks and common ſewers, it is carried away in drains or earthen pipes; but when it ſerves to play the baſons that lie below it, it muſt paſs through leaden pipes.

Theſe baſons are now pretty generally rejected by perſons of good taſte, as being no ways ornamental; therefore where there is a neceſſity to make reſervoirs for water for the uſe of gardens, they are commonly dug in the loweſt part of gardens, or where the ſpot is moſt convenient for receiving the water, which may run from the adjacent grounds in hard rains; theſe ponds ſhould have their ſides made very eaſy, for, if they are too upright, the earth frequently breaks down by the water waſhing, and making it hollow below; the ſides and bottoms of theſe ponds ſhould be laid nine or ten inches thick with well wrought clay; and, as the clay is finiſhed, it ſhould be well covered to prevent the ſun and wind from cracking it before the water is let in. The figures of theſe ponds ſhould not be regular, for the ſhape of the hollow, where they are made, ſhould be followed, which will ſave expence, and have a better appearance.

BASTERIA. Nov. Gen. All-ſpice.

As this plant had no proper title given to it, I have given it this in honour of my worthy friend Dr. Job Baſter, F. R. S. of Zurick Zee, in Holland, who is a gentleman well ſkilled in botany, and has a fine garden ſtored with rare plants, of which he is very communicative to his friends, as I have many years experienced.

The CHARACTERS are,

The empalement of the flower is ſhort, of one leaf, and cut into five narrow ſegments at the top. It hath a double ſeries of narrow petals, which ſpread open, and turn inward at their extremity. Under the receptacle is ſituated an oval germen, having no ſtyle, but five ſtigma reſting upon it, and is ſurrounded by many ſhort ſtamina, crowned by obtuſe ſummits. The germen afterward becomes a roundiſh fruit, compreſſed at both ends, having cells, containing oblong ſeeds.

We have but one SPECIES of this genus at preſent in England, which is,

BASTERIA foliis ovatis oppoſitis, floribus lateralibus caule frùticoſo ramoſo. *Baſteria with oval leaves placed oppoſite, flowers coming from the ſides of the ſtalks, and a branching ſhrubby ſtalk.* Frûtex Corni foliis conjugatis floribus Anemones ſtellatæ, petalis craſſis rigidis colore ſordidè rubente, cortice Aromatico. Cateſb. Hiſt. Carol. Vol. I. p. 46. *commonly called in Carolina All-ſpice.*

This ſhrub grows naturally in America. Mr. Cateſby, who firſt introduced it into the Engliſh gardens, procured it from the continent, ſome hundred miles on the back of Charles Town, in Carolina.

It ſeldom riſes more than four feet high in this country, dividing into many ſlender branches near the ground, which are garniſhed with two oval leaves placed oppoſite at every joint, which are entire; theſe have ſhort foot-ſtalks; the flowers grow ſingle at the extremity of the foot-ſtalk, which comes out from the wings of the leaves; they have two ſeries of narrow thick petals, which ſpread open, and turn inward at the top, like thoſe of the Starry Anemone, or the Virgin's Bower: theſe are of a ſullen purple colour, and have a diſagreeable ſcent; they appear in May. The embryo ſits beneath the flower, and ſupports five ſtigma; this afterward appears to have five cells, but it never comes to perfection in this country, therefore I can only give a deſcription of it from an imperfect rudiment, which a few years paſt, was fairer than any I had before ſeen. The bark of this ſhrub is brown, and has a very ſtrong aromatic ſcent; from whence the inhabitants of Carolina gave it the title of All-ſpice, by which it is generally known in the nurſeries near London.

This ſhrub will thrive in the open air in England, if it is planted in a warm ſituation and a dry ſoil. It is propagated by laying down the young branches, which will take root in one year, and may then be taken from the mother plant, and planted where they are deſigned to remain, for they do not bear tranſplanting well, after they are grown to any ſize. When the layers are tranſplanted, the ſurface of the ground ſhould be covered with mulch, to prevent the drying winds from penetrating the ground to their roots; and if the ſeaſon proves dry, they muſt be watered once a week, but ſhould not have too much wet, for that will rot their tender fibres.

The beſt time for laying down the branches, is in the autumn, but they ſhould not be tranſplanted till the ſpring twelve months after, for the ſpring is the ſafeſt time to remove theſe plants. After the branches are laid down, there ſhould be ſome old tanners bark laid upon the ſurface of the ground, to keep out the froſt, which ſhould alſo be done every winter, while the plants are young, which will prevent the froſt from penetrating to their root, and thereby ſecure them.

This plant was very ſcarce in England, till within a few years paſt, that many of them have been brought from Carolina, where they have been greatly increaſed in the gardens near Charles Town.

Dr. Kempfer has given a figure and deſcription of a plant, in his Amœnitates Exoticarum, which ſeems to be of this genus; but he mentions the fruit to be compoſed of eight cells; whereas, ſo far as I have been able to examine this, it appears to have but five; however, the flower and general ſtructure of the plant, agrees very well with this, but I ſuppoſe it to be a diſtinct ſpecies, the leaves of this being much longer, and the flowers ſtand upon naked foot-ſtalks; whereas thoſe of our ſort have commonly two ſmall leaves, which are narrower, and more pointed than thoſe upon the branches: but I find Dr. Linnæus and Monſieur Du Hamel, both ſuppoſe they are the ſame plant.

After I had given a figure of this plant, in plate LX. of my Figures of Plants, I received Monſieur Du Hamel's book of the trees and ſhrubs, which will grow in the open air about Paris, in which he has given a bad figure of this plant, under the title of Butneria; but as my plate was firſt publiſhed, and I was not appriſed of his title, I have continued my title to it; not from any attachment to it, as being my own, but rather to avoid confuſion, which muſt attend the frequent alteration of the names of plants, which is too much in faſhion at preſent.

BAUHINIA, Mountain Ebony, *vulgò*. This plant was ſo named by father Plumier, in honour of the two famous botaniſts, John and Caſpar Bauhin.

The CHARACTERS are,

The empalement of the flower is permanent, tubulous, of one leaf, and cut into five parts at the top; the flower is compoſed of five petals, which in ſome ſpecies are ſpear-ſhaped, waved and reflexed, but in others roundiſh and concave: it hath ten ſtamina, which are of unequal lengths, ſome of theſe are crowned by oval ſummits, but others have none. The oblong germen ſits upon the foot-ſtalk, ſupporting a ſlender declining ſtyle, which turns upward at the point, crowned by an obtuſe ſtigma; the germen afterward becomes a long taper pod, incloſing a row of roundiſh compreſſed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, entitled Decandria Monogynia, the flower having ten ſtamina and one ſtyle.

The SPECIES are,

1. BAUHINIA (*Aculeata*) caule aculeato. Hort. Cliff. 156. *Bauhinia with a prickly ſtalk.* Bauhinia aculeata folio rotundo emarginato. Plum. Nov. Gen. 23.
2. BAUHINIA (*Tomentoſa*) foliis cordatis, lobis ſemiorbiculatis tomentoſis. Lin. Sp. 536. *Bauhinia with heart-ſhaped leaves, and ſemiorbicular woolly lobes.* Bauhinia flore luteo ſpicato folio ſubrotundo bicorni. Houſt.
3. BAUHINIA (*Acuminata*) foliis ovatis lobis acuminatis ſemi-ovatis. Lin. Sp. Plant. 375. *Bauhinia with oval leaves, and pointed lobes which are half oval.* Bauhinia non aculeata folio ampliori & bicorni. Plum. Nov. Gen. 23.
4. BAUHINIA (*Ungulata*) foliis, lobis parallelis. Lin. Sp. 535. *Bauhinia with oval leaves, whoſe lobes are parallel.* Bauhinia non aculeata folio nervoſo bicorni, floribus albicantibus. Houſt.
5. BAUHINIA (*Emarginata*) caule aculeato, foliis cordatis lobis orbiculatis, ſubtus tomentoſis. *Bauhinia with a prickly ſtalk, and heart-ſhaped leaves with round lobes, which are woolly on their under ſide.* Bauhinia aculeata folio rotundo emarginato flore magno albo. Houſt.
6. BAUHINIA (*Purpurea*) folio ſubcordatis bipartitis rotundatis, ſubtus tomentoſis. Lin. Sp. 536. *Bauhinia with almoſt heart-ſhaped leaves divided in two roundiſh lobes woolly on their under ſide.* Bauhinia non aculeata folio ſubrotundo bicorni, floribus albis. Houſt.
7. BAUHINIA (*Rotundata*) foliis ſubcordatis bipartitis rotundatis caule aculeato, floribus ſparſis. *Bauhinia with heart-ſhaped, bifid, rounded leaves, a prickly ſtalk, and flowers growing ſparſly.* Bauhinia aculeata foliis ſubrotundis bicornis flore magno albo. Houſt.
8. BAUHINIA (*Variegata*) foliis cordatis lobis coadunatis obtuſis. Lin. Sp. Plant. 375. *Bauhinia with heart-ſhaped leaves, and obtuſe lobes which join together.* Chovanna-mandaru. Hort. Mal. 1. p. 57.
9. BAUHINIA (*Scandens*) caule cirrhifero. Lin. Sp. Plant. 374. *Bauhinia with a ſtalk having tendrils.*
10. BAUHINIA (*Divaricata*) foliis ovatis lobis divaricatis. Lin. Sp. Plant. 374. *Bauhinia with oval leaves, whoſe lobes ſpread different ways.* Bauhinia foliis quinquenerviis laciniis acuminatis remotiſſimis. Hort. Cliff. 156.

The firſt ſort grows plentifully in Jamaica, and the other ſugar iſlands in America, where it riſes to the height of ſixteen or eighteen feet, with a crooked ſtem, and divides into many irregular branches, armed with ſhort ſtrong ſpines, garniſhed with compound winged leaves, each having two or three pair of lobes, ending with an odd one, which are oblique, blunt, and indented at the top. The ſtalks are terminated by ſeveral long ſpikes of yellow flowers, which are ſucceeded by bordered pods, about three inches long, which contain two or three ſwelling ſeeds. Theſe pods are glutinous, and have a ſtrong balſamic ſcent, as have alſo the leaves when bruiſed. It is called in America, the Indian Savin-tree, from its ſtrong odour, ſomewhat reſembling the common Savin.

The ſecond ſort was ſent me from Campeachy, in 1730, by the late Dr. Houſton, where he found it growing naturally. This riſes to the height of twelve or fourteen feet, with a ſmooth ſtem, dividing into many branches, garniſhed with heart-ſhaped leaves, having two ſmooth-pointed lobes; the extremity of every branch is terminated by a long ſpike of yellow flowers, ſo that when theſe trees are in flower, they make

make a fine appearance. The pods are ſwelling, and about five inches long, each containing five or ſix roundiſh compreſſed ſeeds.

The third ſort grows naturally in both Indies, where it riſes with ſeveral pretty ſtrong, upright, ſmooth ſtems, ſending out many ſlender branches, garniſhed with oval leaves, deeply divided into two lobes. The leaves come out without order, and have long foot-ſtalks, but are much thinner than thoſe of the ſpecies before-mentioned. The flowers come out at the extremity of the branches, three or four in a looſe bunch; the petals are red, or ſtriped with white, others are plain upon the ſame branch; the ſtamina and ſtyle are white, and ſtand out beyond the petals. Theſe flowers are ſucceeded by long flat pods of a dark brown colour, each containing five or ſix roundiſh compreſſed ſeeds. The wood of this tree is very hard, and veined with black, from whence the inhabitants of America call it Mountain Ebony.

The fourth ſort grows naturally at Campeachy, from whence I received the ſeeds. This riſes to the height of twenty feet, with a ſmooth ſtem, dividing into many ſmall branches, garniſhed with oblong heart-ſhaped leaves, having two pointed parallel lobes, which have each three longitudinal veins. The leaves are placed alternately on the branches, which are terminated by looſe bunches of white flowers; theſe are ſucceeded by very long narrow compreſſed pods, which have eight or ten compreſſed roundiſh ſeeds in each.

The fifth ſort was ſent me from Carthagena, in New Spain, where it grows in plenty. This ſeldom riſes more than ten feet high, dividing into many irregular branches, armed with ſhort crooked ſpines; the leaves grow alternate, are heart-ſhaped, and have two roundiſh lobes; they are woolly on their under ſide, and have ſhort foot-ſtalks. The flowers grow at the extremity of the branches, two or three together; theſe are large, and of a dirty white colour, and are ſucceeded by ſhort flat pods, each containing two or three ſeeds.

The ſixth ſort grows naturally at La Vera Cruz. This riſes to the height of twenty-five, or thirty feet, with many irregular ſtems, which divide into many ſlender branches; garniſhed with heart-ſhaped leaves, having two roundiſh lobes. The flowers come out in looſe ſpikes at every joint from the wings of the leaves, with naked foot-ſtalks, and are of a dirty white colour, and are ſucceeded by oblong compreſſed pods, which are broadeſt at their extremity, where they are rounded, each containing three or four compreſſed ſeeds.

The ſeventh ſort grows naturally at Carthagena, in New Spain. This riſes twenty feet high, with a ſtrong upright ſtem, which ſends out many branches toward the top; armed with ſpines growing by pairs, which are ſtrong and crooked. The leaves are heart-ſhaped and grow alternately, having two rounded lobes. The flowers are large and white, coming out thinly at the ends of the branches. The petals of theſe are near two inches long, and ſpread open wide; the ſtamina and ſtyle are nearly of the ſame length. The flowers are ſucceeded by long flat pods, which are narrow, each containing five or ſix ſeeds.

The eighth ſort grows naturally in both Indies. This riſes with a ſtrong ſtem, upward of twenty feet high, dividing into many ſtrong branches, garniſhed with heart-ſhaped leaves, having obtuſe lobes which cloſe together. The flowers are large and grow in looſe panicles; at the extremity of the branches, of a purpliſh red colour, marked with white, and have a yellow bottom. Theſe have a very agreeable ſcent. The flowers are ſucceeded by compreſſed pods, about ſix inches long, and three quarters of an inch broad, containing three or four compreſſed ſeeds in each.

The ninth ſort grows naturally in both Indies, where it riſes with many ſlender ſtalks, which put out tendrils, and faſten themſelves to the neighbouring trees, whereby they riſe to a great height; the leaves come out alternately, are heart-ſhaped, ſtanding upon long foot-ſtalks; theſe are ſix inches long, and three inches and a half broad in the middle, and are deeply cut into two pointed lobes, each having three prominent ribs running longitudinally. This hath not produced flowers in England, nor had I any account of them with the ſeeds, which were ſent me from Campeachy.

The tenth ſort grows naturally in great plenty on the north ſide of the iſland of Jamaica. This is a low ſhrub, ſeldom riſing more than five or ſix feet high, but divides into ſeveral branches, garniſhed with oval leaves, divided into two lobes, which ſpread from each other. The flowers grow in looſe panicles at the end of the branches, which are white, and have a very agreeable ſcent. Theſe appear the greateſt part of ſummer, ſo is one of the great beauties of the hot-houſe. The flowers are ſucceeded by taper pods, about four inches long, each containing four or five roundiſh compreſſed ſeeds, of a dark colour.

All theſe plants are natives of the warm countries, ſo will not thrive in England, unleſs they are kept in a warm ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not perfect their ſeeds in England.

The laſt ſort has ſeveral times produced pods in the Chelſea garden, but they have never come to maturity. The ſeeds ſhould be brought over in their pods, which will preſerve them good. Theſe muſt be ſown in pots filled with light freſh earth, and plunged into a moderate hot-bed of tanners-bark; if the ſeeds are good, the plants will come up in about ſix weeks, and in a month after, will be fit to tranſplant, when they ſhould be carefully ſhaken out of the ſeed pot, ſo as not to tear off the roots, and each planted into a ſeparate ſmall pot filled with light loamy earth, and plunged into the hot-bed again, being careful to ſhade them until they have taken freſh root, after which they ſhould have freſh air admitted to them every day in warm weather. In the autumn they muſt be placed in the bark-ſtove, and treated in the ſame way as other tender exotics, giving them but little water in winter. As theſe plants frequently flower, they are worthy of a place in the ſtove.

BAY. See LAURUS.

BEANS. See FABA.

BEANS, (KIDNEY or FRENCH.) See PHASEOLUS.

BEAN-TREFOIL. See CYTISUS.

BEAR's-EAR. See AURICULA.

BEAR's-EAR SANICLE. See VERBASCUM.

BEAR's-FOOT. See HELLEBORUS.

BECABUNGA, or Brook-lime.

This is a ſort of Veronica, or Water Speedwell; of which there are two ſorts, one with a long leaf, and the other round; they are both very common in ditches, and watery places, almoſt every where in England; the ſecond ſort is uſed in medicine.

BEE, or GNAT-FLOWER. See ORCHIS.

BEECH-TREE. See FAGUS.

BELLADONA. See ATROPA.

BELL-FLOWER. See CAMPANULA.

BELLIS [is ſo called Bellus, *Lat.* pretty, handſome, &c.] the Daiſy.

The CHARACTERS are,

It hath a radiated diſcous flower, compoſed of many hermaphrodite florets in the diſk, and female florets in the rays; included in a common empalement, with a double ſeries of ſmall leaves of equal length. The hermaphrodite florets in the diſk, are funnel-ſhaped, and cut into five parts at the brim; the female florets are tongue-ſhaped, and make the border; theſe have no ſtamina, but an oval germen ſupporting a ſlender ſtyle, crowned by two ſpreading ſtigma; the hermaphrodite florets have an oval germen, ſupporting a ſimple ſtyle, crowned by a bordered ſtigma. This is attended by five ſhort ſtamina, crowned by tubular cylindrical ſummits. The germen afterward becomes a ſingle naked ſeed placed vertically.

This

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, the flowers being compoſed of female and hermaphrodite florets, included in a common empalement.

The SPECIES are,

1. BELLIS (*Perennis*) ſcapo nudo unifloro. Hort. Cliff. 418. *Daiſy with a naked ſtalk, having one flower.* Bellis ſylveſtris minor. C. B. P. 267. *Smaller wild Daiſy.*
2. BELLIS (*Annua*) caule ſubfolioſo. Lin. Sp. Plant. 887. *Daiſy with leaves on the lower part of the ſtalk.* Bellis minor pratenſis caule folioſo. Bocc. Muſ. 2. p. 96.
3. BELLIS (*Hortenſis*) hortenſis flore pleno majore. C. B. P. 261. *Garden Daiſy with a larger double flower.*

The firſt ſort is the common Daiſy, which grows naturally in paſture land in moſt parts of Europe, and is often a troubleſome weed in the graſs of gardens, ſo is never cultivated.

The ſecond ſort is a low annual plant, which grows naturally on the Alps, and the hilly parts of Italy. This ſeldom riſes more than three inches high, with an upright ſtalk, which is garniſhed with leaves on the lower part; but the upper part is naked, ſupporting a ſingle flower like that of the common Daiſy, but ſmaller. This is preſerved in ſome botanic gardens for the ſake of variety; it was ſent me from Verona, near which place it grows wild.

The Garden Daiſy is generally ſuppoſed to be only a variety of the wild ſort, which was firſt obtained by culture. This may probably be true, but there has not been any inſtance of late years of the wild ſort having been altered by culture; for I have kept the wild ſort in the garden upward of forty years, and have conſtantly parted the roots, and raiſed many plants from ſeeds, but they have conſtantly remained the ſame; nor have I ever obſerved the Garden Daiſy to degenerate to the wild ſort, where they have been ſome years neglected, tho' they have altered greatly with regard to the ſize and beauty of their flowers. I have alſo obſerved the ſeveral varieties of the Garden Daiſy vary from one to the other, therefore I ſhall not conſider them as diſtinct ſpecies, but ſhall only mention the varieties, which are cultivated in the gardens.

1. The red and white Garden Daiſy, with double flowers.
2. The double variegated Garden Daiſy.
3. The Childing, or Hen and Chicken Daiſy.
4. The Cockſcomb Daiſy with red and white flowers.

The Garden Daiſies flower in April and May, when they make a pretty variety, being intermixed with plants of the ſame growth; they ſhould be planted in a ſhady border, and a loamy ſoil without dung, in which they may be preſerved without varying, provided the roots are tranſplanted and parted every autumn; which is all the culture they require, except the keeping them clear from weeds.

Theſe were formerly planted for edgings to borders, but they are very unfit for this purpoſe; becauſe where they are fully expoſed to the ſun, they frequently die in large patches, whereby the edgings become bald in many places.

BELLIS MAJOR. See CHRYSANTHEMUM.

BELLONIA.

This plant was ſo named by Father Plumier, in honour of the famous Petrus Bellonius, who has left many valuable tracts on natural hiſtory, &c.

The CHARACTERS are,

It hath a permanent empalement which is of one leaf, cut into five parts at the top; the flower is wheel-ſhaped, of one leaf, with a ſhort tube, but ſpread open above, and cut into five obtuſe ſegments. It hath five awl-ſhaped ſtamina, which are ſhort, and crowned by ſhort erect ſummits, which cloſe together. The germen is ſituated under the receptacle of the flower, ſupporting an awl-ſhaped ſtyle, which is longer than the ſtamina, and crowned by an acute ſtigma. The germen afterward becomes an oval turbinated ſeed-veſſel, ending in a point, having one cell filled with ſmall round ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

We have but one SPECIES of this genus, viz.

BELLONIA. Lin. Sp. Plant. 172. Bellonia fruteſcens, folio meliſſæ aſpero. Plum. Nov. Gen. 19.

This plant is very common in ſeveral of the warm iſlands in America, from whence I have received the ſeeds.

It hath a ligneous ſtalk, which riſes ten or twelve feet high, ſending out many lateral branches, garniſhed with oval rough leaves placed oppoſite; the flowers come out from the wings of the leaves, in looſe panicles, which are of the wheel ſhape, of one leaf, divided into five parts; theſe are ſucceeded by oval capſules, ending in a point, which are full of ſmall round ſeeds.

It is propagated by ſeeds, which ſhould be ſown early in the ſpring, in a pot filled with light freſh earth, and plunged into a hot-bed of tanners barks, obſerving to water it frequently, as the earth appears dry; but you muſt be careful not to waſh the ſeeds out of the ground. When the plants are come up half an inch high, they ſhould be carefully tranſplanted into pots filled with light freſh earth, and plunged into the hot-bed again, obſerving to water and ſhade them until they have taken root; after which time they ſhould have air admitted to them every day, when the weather is warm; they muſt alſo be frequently watered. When the plants have filled theſe pots with their roots, they ſhould be carefully ſhaken out of them, and their roots trimmed, and put into larger pots filled with light freſh earth, and plunged into the hot-bed again. In warm weather they ſhould have free air admitted to them every day; but in autumn they muſt be plunged into the bark-ſtove, and treated in the ſame manner as other tender exotic plants. The ſecond year theſe plants will ſometimes flower, but they rarely produce good ſeeds in this climate; however, they may be propagated by cuttings in the ſummer months, provided they are planted in light earth on a moderate hot-bed, and carefully watered and ſhaded until they have taken root. Theſe plants muſt be conſtantly kept in the ſtove, and ſhould have a large ſhare of free air in warm weather; but if they are ſet abroad, they will not thrive in this climate.

BELVEDERE. See CHENOPODIUM.

BENZOIN, the Benjamin-tree. See LAURUS.

BERBERIS, the Barberry, or Pipperidge-buſh.

The CHARACTERS are,

It hath a coloured empalement, which ſpreads open, compoſed of ſix concave leaves, three of which are alternately larger than the other; the flower is of ſix leaves, which are roundiſh, concave, and little larger than the empalement; there are two coloured nectarii, faſtened to the baſe of each petal, and ſix obtuſe, compreſſed, erect ſtamina, with two ſummits faſtened on each ſide their apex. The germen is cylindrical, the length of the ſtamina, having no ſtyle, but crowned by an orbicular ſtigma broader than the germen, having a ſharp border: the germen afterward becomes an obtuſe, cylindrical, umbilicated berry, having a puncture, and one cell incloſing two cylindrical ſeeds.

This genus is ranged in Linnæus's firſt ſection of his ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. BERBERIS (*Vulgaris*) pedunculis racemoſis. Mat. Med. 290. *Barberry with branching foot-ſtalks.* Berberis dumetorum. C. B. P. 454. *The common Barberry.*
2. BERBERIS (*Canadenſis*) foliis obverſè-ovatis. *Barberry with oval obverſe leaves.* Berberis latiſſimo folio Canadenſis. H. R. Par.
3. BERBERIS (*Cretica*) pedunculis unifloris. Lin. Sp. Plant. 331. *Barberry with a ſingle flower on each foot-ſtalk.* Berberis Cretica buxi folio. Tourn. Cor. 42.

The firſt ſort grows naturally in the hedges in many parts of England, but is alſo cultivated in gardens for its fruit, which is pickled, and uſed for garniſhing diſhes. This ſhrub riſes with many ſtalks from

the root, to the height of eight or ten feet, which have a white bark, yellow on the inſide; the ſtalks and branches are armed with ſharp thorns, which commonly grow by threes; the leaves are oval, obtuſe, and ſlightly ſawed on their edges. The flowers come out from the wings of the leaves, in ſmall ramoſe bunches, like thoſe of the Currant-buſh, which are yellow; theſe are ſucceeded by oval fruit, which are firſt green, but when ripe turn to a fine red colour. The flowers appear in May, and the fruit ripens in September.

There are two or three varieties of this ſhrub, which have been mentioned as diſtinct ſpecies; one is the Berberis ſine nucleo. C. B. P. *Barberry without ſtone.* The ſecond is Berberis fructu albo. *Barberry with white fruit.* The third is the Berberis orientalis procerior fructu nigro ſuaviſſimo. Tourn. Cor. *Taller Eaſtern Barberry with a black ſweet fruit.* The firſt of theſe is certainly accidental, becauſe the ſuckers, taken from thoſe buſhes being tranſplanted, commonly produce fruit with ſtones; ſo it is the age of the plant which occaſions that variation. The ſort with white fruit ſeldom bears; the leaves of this are of a lighter green colour, and the bark of the ſtalks are whiter than thoſe of the common, which are the only differences between them, for the fruit is ſeldom produced here. The third ſort appears the ſame with the common, and only differs in the colour and flavour of the fruit, ſo is only a variety.

The common ſort is generally propagated by ſuckers, which are put out in great plenty from the root; but theſe plants are very ſubject to ſend out ſuckers, in greater plenty than thoſe which are propagated by layers; therefore the latter method ſhould be preferred. The beſt time for laying down the branches is in the autumn, when their leaves begin to fall; the young ſhoots of the ſame year are the beſt for this purpoſe; theſe will be well rooted by the next autumn, when they may be taken off, and planted where they are deſigned to remain. Where this plant is cultivated for its fruit, it ſhould be planted ſingle, (not in hedges, as was the old practice) and the ſuckers every autumn taken away, and all the groſs ſhoots pruned out: by this method the fruit will be much fairer, and in greater plenty, than upon thoſe which are ſuffered to grow wild. A few of theſe ſhrubs may be allowed to have place in wilderneſſes, or plantations of ſhrubs, where they will make a pretty variety, and the fruit will be food for the birds; but they ſhould not be planted in great quantities, near walks which are much frequented, becauſe their flowers emit a very ſtrong diſagreeable odour.

The Canada ſort was more common in the Engliſh gardens, ſome years paſt, than at preſent. The leaves of this are much broader, and ſhorter than thoſe of the common ſort, and the fruit is black when ripe. This may be propagated in the ſame way as the common ſort, and is equally hardy.

The Box-leaved ſort is at preſent very rare in England; and while young, the plants are ſomewhat tender, ſo have been killed by ſevere froſt. This never riſes more than three or four feet high in England, but ſends out many ſtalks from the root, which are ſtrongly armed with ſpines at every joint; the leaves are produced without order, and are ſhaped like thoſe of the narrow-leaved Box-tree; the flowers come out from between the leaves, each upon a ſlender foot-ſtalk; but theſe are not ſucceeded by fruit in England.

This ſort may be propagated by laying down the branches in the ſame manner as the firſt; but when the young plants are taken off, they ſhould be planted in pots, and ſheltered under a frame in the winter, till they have obtained ſtrength, when they may be turned out of the pots, and planted in a warm ſituation.

BERMUDIANA. See SISYRINCHIUM.

BERNARDIA. See CROTON.

BESLERIA

This plant was named after Baſilius Beſler, an apothecary at Nuremberg, who was the author of a book, intitled Hortus Eyſtetenſis.

The CHARACTERS are,

The flower is of the perſonated or lip kind, with an empalement of one leaf, which is erect, and cut into five acute parts at the brim: the flower is of one leaf, and quinquefid; the ſegments being roundiſh, the lower being large, and the two upper are leſs divided; it hath four ſtamina in the tube of the flower, two of which are longer than the other, crowned by ſmall ſummits: the oval germen ſupports an awl-ſhaped ſtyle, crowned by an acute ſtigma; this afterward becomes an oval berry, with one cell filled with ſmall ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's twelfth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. BESLERIA (*Melittifolia*) pedunculis ramoſis, foliis ovatis. Lin. Sp. Plant. 619. *Beſleria with branching foot-ſtalks and oval leaves.* Beſleria Meliſſæ Tragi folio. Plum. Nov. Gen. 29.
2. BESLERIA (*Lutea*) pedunculis ſimplicibus confertis, foliis lanceolatis. Lin. Sp. Plant. 619. *Beſleria with ſimple foot-ſtalks growing in cluſters, and ſpear-ſhaped leaves.* Beſleria virgæ aureæ foliis flore luteo minor. Plum. Nov. Gen. 29.
3. BESLERIA (*Criſtata*) pedunculis ſimplicibus ſolitariis, involucris pentaphyllis propriis. Lin. Sp. Plant. 619. *Beſleria with ſimple ſtalks growing ſingle, and a five-leaved involucrum.* Beſleria ſcandens criſtata fructu nigro. Plum. Nov. Gen. 29.

The firſt ſort hath a ſmooth woody ſtalk which is jointed; at each joint are placed two oval nervous leaves oppoſite, which are crenated on their edges; the flowers come out from the wings of the leaves, upon ſhort branching foot-ſtalks, each ſuſtaining ſix or eight flowers, which ſtand each upon a ſeparate ſmaller foot-ſtalk. Theſe are of one leaf, of an anomalous figure, and quinquefid; after the flower is paſt, the germen becomes an oval ſoft berry, with one cell filled with ſmall ſeeds.

The ſecond ſort riſes with a ligneous ſtem ſix or ſeven feet high, dividing toward the top into many irregular branches, garniſhed with ſpear-ſhaped ſawed leaves, which have many tranſverſe veins; the flowers come out at the wings of the leaves, in large cluſters, each having a ſeparate foot-ſtalk: theſe are ſmall, tubulous, and of a pale yellow colour, and are ſucceeded by round ſoft berries, incloſing many ſmall ſeeds.

The third ſort hath a creeping ſtalk, which ſends out roots at every joint, garniſhed with oval leaves placed oppoſite, which have many tranſverſe ribs, and are ſharply ſawed on their edges; from the wings of the leaves come out the foot-ſtalks of the flowers ſingle, each ſuſtaining one tubulous, irregular, hairy flower, divided at the top into five obtuſe parts, with a large five-leaved involucrum, deeply ſawed on the border: after the flower is paſt, the germen becomes a hairy placenta, in the center of the empalement, containing many ſmall ſeeds.

Theſe plants grow naturally in the warm parts of America. The ſeeds ſhould be ſown on a hot-bed early in the ſpring; and when the plants are come up half an inch high, they ſhould be each tranſplanted into a ſmall pot filled with light freſh earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; after which time they ſhould have air and water in proportion to the warmth of the ſeaſon, and the heat of the bed in which they are placed. When the plants have filled theſe ſmall pots with their roots, they ſhould be ſhaken out of them, and their roots trimmed, and put into larger pots filled with light freſh earth, and plunged into the hot-bed again; where they ſhould have a large ſhare of air in warm weather, and muſt be frequently watered. With this management the plants will thrive very well in ſummer,

but

but in winter they muſt be removed into the ſtove, where they muſt be placed in a temperate warmth, and ſhould be often, but ſparingly, watered. The ſecond year theſe plants will flower, and ſometimes they will perfect their ſeeds in this country; but they muſt be conſtantly preſerved in the ſtove, for they will not live in the open air.

BETA, the Beet.

The CHARACTERS are,

The flower hath a five-leaved concave empalement, which is permanent. It hath no petal, but five awl-ſhaped ſtamina, placed oppoſite to the leaves of the empalement, crowned by roundiſh ſummits. The germen is ſituated below the receptacle, ſupporting two ſhort erect ſtyles, crowned by pointed ſtigma. The germen afterward becomes a capſule with one cell, having a ſingle ſeed, wrapped up in the empalement.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. BETA (*Maritima*) caulibus decumbentibus, foliis triangularibus petiolatis. *Beet with declining ſtalks, and triangular leaves having foot-ſtalks.* Beta ſylveſtris maritima. C. B. P. 118.
2. BETA (*Hortenſis*) foliis radicalibus petiolatis, caulinis ſeſſilibus, ſpicis lateralibus longiſſimis. *Beet with the lower leaves having foot-ſtalks, thoſe upon the ſtalks without, and very long ſpikes of flowers.* Beta alba vel palleſcens, quæ cicla officinarum. C. B. P. 118.
3. BETA (*Vulgaris*) caule erecto. Lin. Sp. 322. *Common red Beet.* Beta rubra radice rapaceâ. C. B. P. 118. *Red Beet with a Turnep root.*

There are ſeveral varieties of this genus, ſome of which are cultivated in the gardens for the kitchen; but as theſe have been improved by culture, ſo they muſt not be deemed diſtinct ſpecies. There are ſome who have ſuppoſed all the ſpecies were only ſeminal variations, but from having cultivated them upward of forty years, I could never obſerve, that either of the three ſpecies here enumerated have altered from one to the other. The only alteration which I have obſerved in the third ſpecies, has been in the colour of the leaves and roots, which will be hereafter mentioned.

The firſt ſort grows naturally on the banks of the ſea, and in ſalt marſhes in divers parts of England. This has been ſuppoſed by many, to be the ſame with the ſecond ſpecies; but I have brought the ſeeds from the places where they grow naturally, many times, and have cultivated the plants with care, but could not find any of the plants vary from their parent plants in their characters, ſo that I can make no doubt of its being a diſtinct ſpecies.

The ſecond ſort is cultivatad in gardens for its leaves, which are frequently uſed in ſoups; the root of this ſort ſeldom grows larger than a man's thumb; the ſtalks grow erect, and are garniſhed with oblong ſpear-ſhaped leaves, growing cloſe to the ſtalk; the ſpikes of flowers come out from the wings of the leaves, which are long, and have narrow leaves placed between the flowers. The lower leaves of the plant are thick and ſucculent, and their foot-ſtalks are broad. The varieties of this are, the White Beet, the Green Beet, and the Swiſs or Chard Beet. Theſe will vary from one to the other by culture, as I have often experienced, but never alter to the firſt or third ſort.

The third ſort hath large, thick, ſucculent leaves, which are for the moſt part of a dark red, or purple colour. The roots of this are large, and of a deep red colour, on which their goodneſs depends; for the larger theſe roots grow, the tenderer they will be; and the deeper their colour, the more they are eſteemed. The varieties of this are, the common Red Beet, the Turnep-rooted Red Beet, the Green-leaved Red Beet, and the Yellow-rooted Beet.

The ſecond ſort, which is cultivated in gardens for its leaves, which are uſed in the kitchen, is commonly ſown by itſelf, and not mixed with other crops. This is ſown the beginning of March, upon an open ſpot of ground, not too moiſt; the ſeeds ſhould be ſown thinly, becauſe the plants require room to ſpread; for when they are too cloſe, the leaves will be ſmall and full of fibres, ſo unfit for the purpoſes deſigned. When the plants have put out four leaves, the ground ſhould be hoed, as is practiſed for Carrots, carefully cutting up all the weeds, and alſo the plants where they are too near each other, leaving them at leaſt four inches aſunder: if this is performed in dry weather, all the preſent weeds will be deſtroyed; but as young weeds will ſoon appear, ſo in three weeks or a month's time, the ground ſhould be a ſecond time hoed over, to cut up the weeds, and thin the plants to a greater diſtance; for by this time they will be paſt danger, ſo ſhould not be left nearer than ſix inches, if regard is had to the goodneſs of their leaves: and if it is of the Swiſs kind, with broad leaves, the plants muſt not be nearer than nine or ten inches. If the ſecond hoeing is well performed, and in dry weather, the ground will remain clean a month longer, when it ſhould be hoed over a third time; which, if properly done, will deſtroy all the weeds; ſo that after this, the plants will ſpread and prevent the weeds from growing, therefore will want but little cleaning for a conſiderable time, and the leaves will ſoon be fit for uſe, when the outer large leaves ſhould be firſt gathered, leaving the ſmall inner leaves to grow larger; ſo that a ſmall ſpot of ground will ſupply a moderate family, and will furniſh a new ſupply of leaves for two years, provided the plants are not permitted to run up to ſeed, for after that, their leaves will not be good: therefore thoſe who are curious in their herbs, muſt ſow a freſh ſpot of ground annually, becauſe theſe plants naturally run up the ſecond year; and although the roots may be continued longer, by cutting off the ſtalks when they begin to ſhoot, yet the leaves will not be ſo large or tender upon theſe roots, as upon the young plants.

The Red Beet is frequently ſown with Carrots, Parſneps, or Onions, by the kitchen gardeners near London, who draw up their Carrots or Onions when they are young, whereby the Beets will have room to grow, when the other crops are gathered; but where the crops are not timely removed from them, it will be a better method to ſow them ſeparately. This ſort requires a deep light ſoil, for as their roots run deep in the ground, ſo in ſhallow ground they will be ſhort and ſtringy. The ſeeds ſhould be ſown in March, and muſt be treated in the ſame manner as the former ſort; but the plants ſhould not be left nearer than a foot diſtance, or in good land a foot and a half, for the leaves will cover the ground at that diſtance. The roots will be fit for uſe in the autumn, and continue good all the winter; but in the ſpring, when they begin to ſhoot, they will be hard and ſtringy. A few roots may be left for ſeed, or ſome of the faireſt roots tranſplanted to a ſheltered ſpot of ground, where they may be defended from ſtrong winds, which frequently break down their ſtalks, if they are not well ſupported, eſpecially when the ſeeds are formed; which becoming heavy as it increaſes in bulk, is apt to weigh down the ſlender ſtalks upon which they grow. The ſeed will ripen in September, when the ſtalks ſhould be cut off, and ſpread on mats to dry, and afterward threſhed out and cleaned, and put up in bags for uſe.

BETONICA [or Vettonica, ſo called from the Vettones, an ancient people of Spain, who firſt uſed this plant], Betony.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is tubulous, cut at the brim into five parts. The flower is of one leaf, of the lip kind, with a cylindrical incurved tube; the upper lip is roundiſh, plain, erect, and entire; the lower lip is cut into three parts, the middle ſegment being broad, roundiſh, and indented at the end. It hath four awl-ſhaped ſtamina, two long and two ſhorter, which incline to the upper lip; theſe have roundiſh ſummits. The germen is quadripartite, ſupporting a ſtyle of the length and

and figure of the ſtamina, crowned by a bifid ſtigma. The germen afterward becomes four naked oval ſeeds, lodged in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's twelfth claſs, intitled Didynamia Gymnoſpermia, the flower having two long and two ſhorter ſtamina, which are ſucceeded by naked ſeeds.

The SPECIES are,

1. BETONICA (*Officinalis*) ſpicâ interruptâ, corollarum laciniâ labii intermediâ emarginatâ. Flor. Leyd. Prod. 316. *Betony with an interrupted ſpike, and the middle ſegment of the lower lip of the flower indented at the end.* Betonica purpurea. C. B. P. 235. *Purple or Wood Betony.*
2. BETONICA (*Danica*) foliis radicalibus ovato-cordatis, caulinis lanceolatis obtuſis ſpicâ craſſiore. *Betony whoſe under leaves are heart-ſhaped, thoſe on the ſtalks ſpear-ſhaped and obtuſe, and a thicker ſpike of flowers.* Betonica major Danica. Park. Theat. 615. Mor. Hiſt. 3. 365.
3. BETONICA (*Alpina*) foliis triangularibus obtuſis ſpicâ breviore. *Betony with obtuſe triangular leaves, and a ſhorter ſpike of flowers.* Betonica minima Alpina Helvetica. Park. Theat. 650.
4. BETONICA (*Orientalis*) ſpicâ integrâ, corollarum laciniâ labii intermediâ integerrimâ. Flor. Leyd. Prod. 316. *Betony with a whole ſpike, and the middle ſegment of the lower lip entire.* Betonica Orientalis anguſtiſſimo & longiſſimo folio, ſpicâ florum craſſiori. Tourn. Corol. 13.
5. BETONICA (*Incana*) foliis lanceolatis obtuſis incanis ſpicâ florum craſſiori. *Betony with obtuſe, ſpear-ſhaped, hoary leaves, and a thicker ſpike of flowers.* Betonica Italica incana flore carneo. Barrel. Icon. 340.

The firſt ſort grows naturally in woods and on ſhady banks in moſt parts of England, ſo is ſeldom cultivated in gardens. This is the ſort which is uſed in medicine, and is greatly eſteemed as a vulnerary herb. There is a variety of this with a white flower, which I have often found growing naturally in Kent.

The ſecond ſort grows naturally in Denmark. This differs greatly from our common ſort, the lower leaves being much broader and heart-ſhaped; thoſe upon the ſtalks are ſpear-ſhaped and rounded at the end, and the ſtalks are larger, ſtand upright, and are terminated by thicker ſpikes of flowers. Theſe differences are conſtant, for I have many years propagated them by ſeeds, and have never found the plants ſo raiſed to vary.

The third ſort grows naturally upon the Alps, where it ſeldom riſes more than four inches high; and when cultivated in a garden, not above ſeven or eight. The leaves of this are much broader at the baſe than thoſe of the common ſort, and are very different in their ſhape, being triangular and blunt at the end. The flowers grow in very ſhort cloſe ſpikes, on the top of the ſtalks. Theſe differences conſtantly hold in the plants raiſed from ſeeds.

The fourth ſort was diſcovered by Dr. Tournefort in the Levant. The leaves of this are very long, narrow, and hairy, and are neatly crenated on their edges. The flowers grow in very cloſe thick ſpikes at the top of the ſtalks, which are larger, and of a lighter purple colour than thoſe of the common ſort.

The fifth ſort grows naturally in Italy, upon the hills, from whence I received the ſeeds. The leaves of this ſort are broader, and not ſo long as thoſe of the common ſort, and are hoary; the ſtalks are ſhorter and much thicker, as are alſo the ſpikes of flowers, than thoſe of the common, and the flowers are larger and of a fleſh colour. This ſort conſtantly keeps the ſame from ſeeds.

There is another ſort which Tournefort and others mention, by the title of Betonica rubicundiſſimo flore montis aurei; which differs but little from the fifth, except in the colour of the flower, ſo I doubt of its being ſpecifically different from that.

All the ſorts are perennial plants, which may be propagated by ſeeds, or parting of their roots. They are all very hardy, but require a ſhady ſituation and a moiſt ſtiff ſoil, in which they will thrive better than in rich ground. The beſt time to tranſplant and ſeparate the roots is in the autumn, but the ſeeds ſhould be ſown in the ſpring upon a ſhady border, and when the plants come up, they will require no other care but to keep them clean from weeds, and to thin them where they are too cloſe.

Theſe all of them flower in May and June, and the ſeeds ripen in Auguſt.

BETONICA AQUATICA. See SCROPHULARIA.

BETONICA PAULI. See VERONICA.

BETULA, the Birch-tree.

The CHARACTERS are,

It hath male and female flowers, at ſeparate diſtances on the ſame tree; the male flowers are collected in a cylindrical katkin, which is ſcaly, looſe, and imbricated on every ſide, each ſcale having three flowers, which have two minute ſcales on the ſide. The flower is compoſed of three equal florets, fixed to the empalement by a ſingle ſcale; each floret is of one leaf, divided into four oval ſegments which ſpread open; theſe have four ſmall ſtamina, crowned by double ſummits. The female flowers grow in a katkin, in the ſame manner as the male. The common katkin is imbricated, having three ſcales which are every way oppoſite, faſtened to the central ſtring or axis, having two heart-ſhaped flowers pointing toward the apex, where it is ſituated. They have no viſible petals, but a ſhort oval germen, ſupporting two briſtly ſtyles, which are the length of the ſcales of the empalement, and crowned with a plain ſtigma. It hath no pericarpium, but the ſeeds are included in the ſcales of the katkin, which are oval and winged.

This genus of plants is ranged in the fourth ſection of Linnæus's twenty-firſt claſs, intitled Moncœcia Tetrandia, there being male and female flowers on the ſame plant, and the male having four ſtamina.

The SPECIES are,

1. BETULA (*Alba*) foliis ovatis acuminatis ſerratis. Hort. Cliff. 442. *Birch-tree with oval ſawed leaves ending in points; the common Birch-tree.*
2. BETULA (*Nana*) foliis orbiculatis. Flor Lap. 266. *Birch-tree with round crenated leaves.* Betula pumila foliis ſubrotundis. Amman. *Dwarf Birch.*
3. BETULA (*Lenta*) foliis cordatis oblongis acuminatis ſerratis. Lin. Sp. Plant. 983. *Birch-tree, with oblong, pointed, heart-ſhaped, ſawed leaves.*
4. BETULA (*Nigra*) foliis rhombeo-ovatis acuminatis duplicato-ſerratis. Lin. Sp. Plant. 982. *Birch-tree with rhomboid, oval, pointed leaves, which are doubly ſawed.* Betula nigra Virginiana. Pluk. Alm. 67. *Black Virginia Birch-tree.*

The firſt is the common Birch-tree, which is ſo well known as to need no deſcription. This is not much eſteemed for its wood, but however it may be cultivated to advantage upon barren land, where better trees will not thrive; for there is no ground ſo bad, but this tree will thrive in it; for it will grow in moiſt ſpringy land, or in dry gravel or ſand, where there is little ſurface: ſo that upon ground which produced nothing but moſs, theſe trees have ſucceeded ſo well, as to be fit to cut in ten years after planting, when they have been ſold for near 10 l. per acre ſtanding, and the after produce has been conſiderably increaſed. And as many of the woods near London, which were chiefly ſtocked with theſe trees, have been of late years grubbed up, ſo the value of theſe plantations have advanced in proportion. Therefore thoſe perſons who are poſſeſſed of ſuch poor land, cannot employ it better, than by planting it with theſe trees, eſpecially as the expence of doing it is not great.

The beſt method to cultivate this tree, is to furniſh yourſelf with young plants from the woods where they naturally grow, and are generally found there in great plenty; but in places where there are no young plants to be procured near, they may be raiſed from ſeeds, which ſhould be carefully gathered in the autumn, as ſoon as the ſcales under which they are lodged begin to open, otherwiſe they will ſoon fall out and be loſt: the ſeeds are ſmall, ſo ſhould not be buried deep

deep in the ground. The autumn is the beſt ſeaſon to ſow them, and in a ſhady ſituation, the plants will thrive better than when they are expoſed to the full ſun; for in all places where there are any large trees their ſeeds fall, and the plants come up well without care; ſo that if the young plants are not deſtroyed by cattle, there is generally plenty of them in all the woods where there are any of theſe trees. Theſe wild plants ſhould be carefully taken up, ſo as not to deſtroy their roots. The ground where they are to be planted, will require no preparation; all that is neceſſary to be done, is to looſen it with a ſpade or mattock, in the places where the plants are to ſtand, making holes to receive their roots, covering them again when the plants are placed, and cloſing the earth hard to their roots. If the plants are young, and have not much top, they will require no pruning; but where they have buſhy heads, they ſhould be ſhortened to prevent their being ſhaken and diſplaced by the wind. When the plants have taken root, they will require no other care, but to cut down the great weeds which would over-hang the plants; which may be done with a ſickle, being careful not to cut or injure the young trees. This need not be repeated oftener than two or three times in a ſummer the two firſt years, after which time the plants will be ſtrong enough to keep down the weeds, or at leaſt be out of danger from them.

Theſe may be planted any time from the middle of October till the middle of March, when the ground is not frozen; but in dry land the autumn is the beſt ſeaſon, and the ſpring for moiſt. The diſtance which they ſhould be planted, is ſix feet ſquare, that they may ſoon cover the ground, and by ſtanding cloſe, they will draw each other up; for in ſituations where they are much expoſed, if they are not pretty cloſe, they will not thrive ſo well.

If the plants take kindly to the ground, they will be fit to cut in about ten years; and afterward they may be cut every ſeventh or eighth year, if they are deſigned for the broom-makers only; but where they are intended for hoops, they ſhould not be cut oftener than every twelfth year.

The expence of making theſe plantations in places where the young plants can be eaſily procured, will not exceed forty ſhillings per acre, and the after expence of cleaning about twenty ſhillings a year more; ſo that the whole will not be more than 3l. and if the land ſo planted be of little value, the proprietor cannot make better uſe of his money; for when the wood is cut, it will repay the expence with intereſt, and a perpetual ſtock upon the ground. I have ſeen ſeveral of theſe plantations made upon land which would not lett for one ſhilling per acre, which has produced from 10 to 12l. an acre, clear of the expence in cutting, and this every twelfth year. The broom-makers are conſtant cuſtomers for Birch, in all places within twenty miles of London, or where it is near water carriage; in other parts the hoop-benders are the purchaſers; but the larger trees are often bought by the turners, and the wood is uſed for making ox-yokes, and other inſtruments of huſbandry.

In ſome of the northern parts of Europe, the wood of this tree is greatly uſed for making of carriages and wheels, being hard and of long duration. In France it is generally uſed for making wooden ſhoes. It makes very good fuel.

In ſome places theſe trees are tapped in the ſpring, and the ſap drawn out to make Birch wine, which has been recommended for the ſtone and gravel, as is alſo the ſap unfermented. The bark of the Birch-tree is almoſt incorruptible. In Sweden the houſes are covered with it, where it laſts many years. It frequently happens, that the wood is entirely rotten, and the bark perfectly ſound and good.

The ſecond ſort grows naturally in the northern parts of Europe, and upon the Alps; this ſeldom riſes above two or three feet high, having ſlender branches, garniſhed with round leaves, but ſeldom produces either male or female flowers here. It is preſerved in ſome curious gardens for the ſake of variety, but is a plant of no uſe.

The third and fourth ſorts grow naturally in North America, from whence their ſeeds have been brought to Europe, and many of the plants have been raiſed, which thrive very faſt here. In Canada theſe trees grow to a large ſize, where the third ſort is called Meriſier. The natives of that country make canoes of the bark of theſe trees, which are very light, and of long duration.

Both theſe ſorts may be propagated by ſeeds in the ſame manner as the firſt, and are equally hardy; ſome of the trees now begin to produce their katkins in England, ſo that we may hope to have plenty of their ſeeds of our own growth, for at preſent we are ſupplied with them from America. As theſe grow more vigorouſly than the common ſort, and thrive on the moſt barren ground, they may be cultivated to great advantage in England, for their wood is much eſteemed in Canada, where the trees grow to a large ſize: and they are by no means an unſightly tree in parks, for their ſtems are ſtrait, the bark ſmooth, and their leaves are much larger than thoſe of the common Birch, ſo may be planted in ſuch places where few other trees will thrive.

BIDENS. Tourn. Inſt. R. H. 362. tab. 262. Lin. Gen. Plant. 840. Water Hemp Agrimony.

The CHARACTERS are,

The common empalement is erect, and often equal, compoſed of ſmall, oblong, concave leaves; it hath a compound flower; the middle or diſk is compoſed of hermaphrodite florets, which are funnel-ſhaped and quinquefid. Theſe have five ſhort capillary ſtamina, with cylindrical ſummits, and an oblong germen ſupporting a ſingle ſtyle the length of the ſtamina, crowned by two oblong reflexed ſtigma. The female florets which compoſe the border are naked; theſe are all ſucceeded by a ſingle, angular, obtuſe ſeed, having two or more briſtles or teeth, by which they faſten themſelves to whatever paſſes by them when ripe.

This genus is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis, the flowers being compoſed of hermaphrodite and female florets, which are ſucceeded by ſeeds.

There are ſeveral ſpecies of this plant, which are ſeldom admitted into gardens, ſome of which are common weeds in England, therefore I ſhall only mention thoſe which are frequently preſerved in the gardens of the curious.

1. BIDENS (*Frondoſa*) foliis pinnatis ſerratis ſeminibus erecto-conſtantibus calycibus frondoſis corollis radiatis. Lin. Sp. Plant. 832. *Water Hemp Agrimony with winged ſawed leaves, ſeeds ſtanding erect, a very buſhy empalement, and radiated flower.* Bidens Canadenſis latifolia flore luteo. Tourn. Inſt. 362.
2. BIDENS (*Nodiflora*) foliis oblongis integerrimis caule dichotomo floribus ſolitariis ſeſſilibus. Lin. Sp. Plant. 832. *Hemp Agrimony with oblong entire leaves, a forked ſtalk, and a ſingle flower growing cloſe to the ſtalk.* Bidens nodiflorâ brunellæ folio. Hort. Elth. 52.
3. BIDENS (*Nivea*) foliis ſimplicibus ſubhaſtatis ſerratis petiolatis, floribus globoſis, pedunculis elongatis ſeminibus lævibus. Lin. Sp. Plant. 833. *Hemp Agrimony with ſingle ſawed leaves having foot-ſtalks, globular flowers with longer foot-ſtalks, and ſmooth ſeeds.* Bidens ſcabra flore nivea, folio trilobato. Hort. Elth. 55.
4. BIDENS (*Fruteſcens*) foliis ovatis ſerratis petiolatis, caule fruticoſo. Hort. Cliff. 399. *Hemp Agrimony with oval ſawed leaves having foot-ſtalks, and a ſhrubby ſtalk.*
5. BIDENS (*Scandens*) foliis ternatis acutis ſerratis caule ſcandente floribus paniculatis. *Three-leaved Hemp Agrimony, with pointed ſawed lobes, a climbing ſtalk, and flowers growing in panicles.* Chryſanthemum trifoliatum ſcandens, flore luteo ſemine longo roſtrato bidente. Sloan. Cat. Jam. 125.
6. BIDENS (*Bullata*) foliis ovatis ſerratis, inferioribus oppoſitis, ſuperioribus ternatis intermedio majore. Lin. Sp.

Sp. Plant. 833. *Hemp Agrimony with oval ſawed leaves, the lower ones growing oppoſite, but the upper having three lobes, the middle of which is the largeſt.* Cryſanthemum conyzoides nodiflorum ſemine roſtrato bidente. Sloan. Cat. Jam. 126.

The firſt ſort grows naturally in Virginia, Maryland, and Canada, where it is often a troubleſome weed. It riſes about three feet high, ſending out many horizontal branches, garniſhed with trifoliate leaves, deeply ſawed on their edges; the flowers are produced at the end of the branches in ſmall cluſters, which are yellow, and ſucceeded by oblong ſquare ſeeds, having two crooked horns, by which they faſten themſelves to the clothes of thoſe who paſs near them. There are two ſorts of this, one whoſe flowers have a ſhort empalement, which is Tournefort's broad-leaved Canada Bidens; the other hath a leafy empalement, and is by Juſſieu diſtinguiſhed by the title of Capite folioſo. But I am not very ſure of their being diſtinct ſpecies, though I have many years cultivated both; for their ſeeds when ripe ſpread ſo far, that in a ſmall garden they cannot be kept ſeparate. It is eaſily propagated by ſeeds ſown in the ſpring, in an open ſituation, where, if the ſeeds are permitted to ſcatter, the plants will come up the following ſpring, and two or three of them may be tranſplanted where they are to grow, and after they are rooted, will require no farther care. This is an annual plant, ſo decays ſoon after the ſeeds are ripe.

The ſecond ſort grows naturally in warm countries. This is an annual plant, which riſes near three feet high, dividing upward into ſeveral branches, which are garniſhed with oblong entire leaves; the flowers come out ſingle at the diviſions of the branches, ſitting cloſe; theſe are white, and ſucceeded by ſmooth ſeeds.

This ſort muſt be ſown upon a moderate hot-bed in the ſpring, and afterward treated like other hardy annual plants, planting them into the full ground the latter end of May. They will flower in June, and their ſeeds ripen in autumn, ſoon after which the plants will decay.

The third ſort grows naturally in South Carolina, and alſo at Campeachy. This is alſo an annual plant, which riſes three feet high, dividing upward into many ſlender branches, whoſe joints are far aſunder; the leaves come out by pairs at each joint upon long ſlender foot-ſtalks, which are oval, ending in a point. The flowers grow at the extremity of the branches in ſmall globular heads, which are very white, ſtanding upon very long foot-ſtalks, and are ſucceeded by ſmooth ſeeds. This muſt be ſown upon a hot-bed, and treated as the former. It flowers and ſeeds about the ſame time.

The fourth ſort riſes with a ſhrubby ſtalk to the height of ſix or ſeven feet, dividing into many branches, whoſe joints are very diſtant, at each of which are placed two oval leaves, ſlightly ſawed on their edges, and have ſhort foot-ſtalks. The flowers are produced at the end of the branches in ſmall cluſters, each ſtanding upon a long naked foot-ſtalk; theſe are ſucceeded by flat ſeeds, having two ſhort teeth at their extremity. I received the ſeeds of this ſort from Carthagena in New Spain. This is propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted into a ſeparate ſmall pot, and plunged into a freſh hot-bed, and treated as other tender plants from the ſame countries, and in autumn placed in the ſtove: the following ſummer they will abide ſome years with proper management.

The fifth ſort riſes with a climbing ſlender ſtalk to the height of ten feet, dividing into many branches, garniſhed with trifoliate ſawed leaves: the flowers grow in large panicles at the end of the branches; they are yellow, and are ſucceeded by flat ſeeds having two teeth. This plant grows naturally in Jamaica, from whence I received the ſeeds. It muſt be treated in the ſame manner as the former ſort, and will continue two or three years.

The ſixth ſort is annual. This riſes about two feet high, and ſends out ſeveral lateral ſhoots, which at the bottom have oval leaves placed by pairs at the joints, but upward they are trifoliate, the middle lobe being very large, and the two ſide ones ſmall; the flowers are produced at the wings of the leaves upon ſhort leafy foot-ſtalks, and are yellow, but very ſmall. It flowers in July, and the ſeeds ripen in autumn; the ſeeds of this muſt be ſown upon a hot-bed, and treated as the ſecond ſort.

BIFOLIUM, Twyblade. See Ophrys.

BIGNONIA. Tourn. Inſt. 164. Lin. Gen. Plant. 677. [M. Tournefort called this plant Bignonia, in memory of abbot Bignon, librarian to Lewis XIV. king of France, he being a great encourager of learning.] The Trumpet Flower, or Scarlet Jaſmine.

The Characters are,

The empalemnet is cup-ſhaped, quinquefid, and of one leaf. The flower is of the ringent, or grinning kind, tubulous, with long chaps, which are ſwelling, and bell-ſhaped, divided into five parts at the top; the two upper ſegments are reflexed, and the under ſpread open; it hath four awl-ſhaped ſtamina ſhorter than the petal, two longer than the other, having oblong reflexed ſummits. In the center is an oblong germen, ſupporting a ſlender ſtyle, crowned by a roundiſh ſtigma. The germen afterward becomes a bivalve pod, with two cells, filled with compreſſed winged ſeeds, lying over each other imbricatim.

This genus of plants is ranged in the ſecond diviſion of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds included in a capſule.

The Species are,

1. Bignonia (*Radicans*) foliis pinnatis, foliolis inciſis, caule geniculis radicatis. Lin. Hort. Cliff. 217. *Bignonia with winged leaves, which are cut on their edges, and roots coming out at the joints of the ſtalk.* Bignonia Americana Fraxini folio flore amplo Phœnicio. Tourn. Inſt. 164.
2. Bignonia (*Catalpa*) foliis ſimplicibus cordatis, caule erecto, floribus diandris. Lin. Sp. Plant. 622. *Bignonia with ſingle heart-ſhaped leaves, an upright ſtalk, and flowers with two ſtamina.* Bignonia Urucu foliis, flore ſordidè albo, intus maculis purpureis & luteis adſperſo, ſiliquâ longiſſimâ & anguſtiſſimâ. Cateſb. Carol. 1. p. 49.
3. Bignonia (*Fruteſcens*) foliis pinnatis, foliolis lanceolatis acutis ſerratis, caule erecto, floribus paniculatis erectis. *Bignonia with winged leaves, having acute ſawed lobes, an upright ſtalk, and flowers growing in panicles erect.* Bignonia arbor flore luteo Fraxini folio. Plum. Sp. Plant. 5.
4. Bignonia (*Pubeſcens*) foliis conjugatis cirrhoſis foliolis cordato-lanceolatis foliis imis ſimplicibus. Vir. Cliff. 59. *Bignonia with conjugated leaves having tendrils, the leaves ſpear-ſhaped, and the lower leaves ſingle.* Bignonia Americana Capreolis donata ſiliqua breviore. Breyn. Ic. 33.
5. Bignonia (*Unguis Cati*) foliis conjugatis, cirrho breviſſimo arcuato tripartito. Lin. Sp. Plant. 623. *Bignonia with conjugated leaves, and ſhort arched tendrils, divided into three parts.* Bignonia Americana capreolis aduncis donatâ, ſiliquâ longiſſimâ. Tourn. Inſt. 164.
6. Bignonia (*Æquinoctialis*) foliis conjugatis cirrhoſis, foliolis ovato-lanceolatis, pedunculis bifloris ſiliquiis linearibus. Lin. Sp. 869. *Bignonia with conjugated leaves, having tendrils, whoſe lobes are oval, ſpear-ſhaped, and linear pods.*
7. Bignonia (*Sempervirens*) foliis ſimplicibus lanceolatis caule volubili. Lin. Sp. Plant. 623. *Bignonia with ſingle ſpear-ſhaped leaves, and a twining ſtalk.* Gelſeminum ſive Jaſminum luteum odoratum Virginianum ſcandens & ſempervirens. Park. Cateſb. 1. p. 53.
8. Bignonia (*Pentaphylla*) foliis digitatis foliolis integerrimis obovatis. Hort. Cliff. 497. *Bignonia with fingered leaves, whoſe lobes are entire.* Bignonia arbor pentaphylla flore roſeo. Plum. Sp. Plant. 5.

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9. Bignonia (*Leucoxylon*) foliis digitatis foliolis integerrimis ovatis acuminatis. Lin. Sp. Plant. 870. *Bignonia with fingered leaves, whoſe lobes are oval, pointed, and entire.* Leucoxylon arbor ſiliquoſa, quinis foliis, floribus Nerii, alato ſemine. Pluk. Alm. 215. tab. 200. f. 4. *commonly called in America Tulip Flower.*

10. Bignonia (*Paniculata*) foliis conjugatis cirrhoſis, foliolis cordato-ovatis, floribus racemoſo-paniculatis. Lin. Sp. Plant. 623. *Bignonia with conjugated leaves, having tendrils, the lobes oval and heart-ſhaped, and flowers in branching panicles.* Bignonia bifolia ſcandens, flore violaceo odoro, fructu ovato duro. Plum. Cat. 5.

11. Bignonia (*Cærulea*) foliis bipinnatis foliolis lanceolatis integris. Lin. Sp. Plant. 625. *Bignonia with double winged leaves, which are entire and ſpear-ſhaped.* Arbor Guajaci latiore folio, Bignoniæ flore cæruleo, fructu duro in duas partes diſſiliente ſeminibus alatis imbricatim poſitis. Cateſb. Carol. 1. p. 42.

12. Bignonia (*Crucigera*) foliis conjugatis cirrhoſis foliolis cordatis. Vir. Cliff. 60. *Bignonia with conjugated heart-ſhaped leaves, having tendrils, and a ſtalk having tendrils.* Pſeudo Apocynum folliculis maximis obtuſis ſeminibus ampliſſimis alis membranaceis. Mor. Hiſt. 3. p. 62.

13. Bignonia (*Capreolata*) foliis conjugatis cirrhoſis foliolis cordato-lanceolatis, foliis imis ſimplicibus. Lin. Sp. 870. *Bignonia with conjugated heart-ſhaped leaves, having tendrils, whoſe lower leaves are ſingle, growing in panicles, and long compreſſed pods.*

14. Bignonia (*Triphylla*) foliis ternatis glabris, foliolis ovatis acuminatis, caule fruticoſo erecto. Lin. Sp. 870. *Smooth three-leaved Bignonia, with oval lobes ending in a point, and a ſhrubby ſtalk.* Bignonia ſruteſcens triphylla glabra, ſiliquis longis compreſſis. Houſt. Cat.

The firſt ſort grows naturally in Virginia and Canada. It hath large rough ſtems, which ſend out many trailing branches, putting out roots at their joints, which faſten themſelves to the trees in their natural places of growth, whereby they climb to a great height; and in Europe, where they are generally planted againſt walls, they faſten themſelves thereto by their roots, which ſtrike into the mortar of the joints ſo ſtrongly, as to ſupport their branches, and will riſe to the height of forty or fifty feet. The branches are garniſhed with winged leaves at every joint, placed oppoſite, compoſed of four pair of ſmall leaves, terminated by an odd one; theſe are ſawed on their edges, and end in a long ſharp point. The flowers are produced at the ends of the ſhoots of the ſame year, in large bunches; theſe have long ſwelling tubes, ſhaped ſomewhat like a trumpet, from whence it had the appellation of Trumpet Flower. They are of an Orange colour, and appear the beginning of Auguſt.

This ſort is very hardy, ſo will thrive in the open air; but as the branches trail, they muſt be ſupported, therefore are uſually planted againſt walls or buildings, where, if the branches have room, they will ſpread to a great diſtance, and riſe very high, ſo are very proper for covering of buildings, which are unſightly. They may alſo be trained up againſt the ſtems of trees, where they may be ſo managed, as to make a fine appearance when they are in flower.

This is propagated by ſeeds, but the young plants ſo raiſed do not flower in leſs than ſeven or eight years; therefore thoſe which are propagated by cuttings or layers from flowering plants, are moſt eſteemed, becauſe they will flower in two or three years after planting. The old plants alſo ſend out many ſuckers from the roots, which may be taken off, and tranſplanted where they are to remain, for theſe plants will not tranſplant ſafely if they are old.

The neceſſary culture for theſe plants after they are eſtabliſhed, is to cut away all the ſmall weak ſhoots of the former year in winter, and ſhorten the ſtrong ones to about two feet long, that young ſhoots may be obtained for flowering the following ſummer; theſe plants are of long duration. There are ſome in gardens which have been planted more than ſixty years, which are now very vigorous, and produce flowers in plenty every ſeaſon.

If the plants are propagated by ſeeds, they ſhould be ſown upon a moderate hot-bed to bring them up, which ſhould be ſoon inured to the open air, to prevent their being drawn up weak; and the firſt winter theſe young plants ſhould be ſcreened from hard froſt, which will kill their tender ſhoots; but the ſpring following they may be planted in the full ground, in a nurſery-bed, at a foot diſtance from each other, where they may remain one or two years to get ſtrength, and afterwards be planted where they are deſigned to grow.

The ſecond ſort was brought into England by Mr. Cateſby, about forty years paſt, who found it growing naturally on the back of South Carolina, at a great diſtance from the Engliſh ſettlements. It is now very plenty in the Engliſh gardens, eſpecially near London, where there are ſome of them near twenty feet high, with large ſtems, and have the appearance of trees.

This ſort riſes with an upright ſtem, covered with a ſmooth brown bark, and ſends out many ſtrong lateral branches, garniſhed with very large heart-ſhaped leaves, placed oppoſite at every joint. The flowers are produced in large branching panicles toward the end of the branches, of a dirty white colour, with a few purple ſpots, and faint ſtripes of yellow on their inſide. The tube of the flower is much ſhorter, and the upper part more expanded, than thoſe of the former ſort, and the ſegments deeper cut, and waved on their edges. The flowers are in America ſucceeded by very long taper pods, filled with flat winged ſeeds, lying over each other like the ſcales of fiſh. In England there has not as yet been any of the pods produced, but the ſeeds are annually brought over from South Carolina. Theſe ſhould be ſown in pots, and plunged into a moderate hot-bed to bring up the plants, which ſhould be inured to the open air by degrees; and, in the beginning of June, placed abroad in a ſheltered ſituation till autumn, when they ſhould be placed under a common frame to ſcreen them from froſt in winter; but in mild weather they muſt be fully expoſed to the open air. The following ſpring theſe may be taken out of the pots, and planted in a nurſery-bed, in a warm ſituation, where they may remain two years to get ſtrength, and afterwards planted in the places where they are deſigned to remain. Theſe plants, when young, are frequently injured by froſt, for they ſhoot pretty late in the autumn, ſo that the early froſts often kill the extremity of their branches; but as the plants advance in ſtrength, they become more hardy, and are ſeldom injured but in very ſevere winters. It is late in the ſpring before theſe trees come out, which has often cauſed perſons to believe they were dead; and ſome have been ſo imprudent, as to cut them down on that ſuppoſition, before the tree was well known.

It may alſo be propapated by cuttings, which ſhould be planted in pots in the ſpring before the trees begin to puſh out their ſhoots, and plunged into a moderate hot-bed, obſerving to ſhade them from the ſun in the middle of the day, and refreſh them occaſionally with water, which muſt not be given to them in too great plenty. In about ſix weeks theſe will have taken root, and made ſhoots above, ſo ſhould have plenty of air admitted to them conſtantly, and hardened by degrees to bear the open air, into which they ſhould be removed, and treated in the ſame manner as the ſeedling plants, and the ſpring following planted out into a nurſery-bed, as is before directed.

As theſe trees have very large leaves, they require a ſheltered ſituation; for where they are much expoſed to ſtrong winds, their leaves are often torn and rendered unſightly, and many times their branches are ſplit and broken by the winds, their leaves being ſo large, as that the wind has great force againſt them. Theſe produce their flowers in Auguſt. They delight in a light moiſt ſoil, where they make great progreſs, and in a few years will produce flowers. It is generally known in the gardens by the Indian title of Catalpa.

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The third ſort is a native of the warmer parts of America, where it was diſcovered by father Plumier, who made a drawing of it, and gave the title of Clematitis to it, which he afterward altered to Bignonia, when he became better acquainted with Tournefort's Syſtem of Botany. This riſes with an upright ſtem, to the height of twelve or fourteen feet, ſending out many ſide branches, garniſhed at every joint by two long winged leaves placed oppoſite; the ſmall leaves which compoſe theſe, are long and ſpear-ſhaped, ending in a point, and ſlightly ſawed on their edges, each leaf being compoſed of ſix pair, terminated by an odd one. The flowers are produced in looſe panicles at the ends of the branches, and are ſhaped like thoſe of the other ſpecies, but ſpread open more at the top. Theſe are yellow, and ſucceeded by compreſſed pods about ſix inches long, having two rows of flat winged ſeeds, like thoſe of the other ſpecies.

I received this ſort firſt in 1729, from La Vera Cruz, in New Spain, where the late Dr. Houſtoun found it growing naturally in great plenty; ſince which time I have received the ſeed from the iſland of Bermuda, by the title of Candle Wood.

It is propagated by ſeeds, which muſt be ſown on a hot-bed, and the plants afterward tranſplanted into ſeparate ſmall pots, filled with light freſh earth, and plunged into a freſh hot-bed to bring them forward, that they may obtain ſtrength before winter; in the autumn they muſt be removed into the bark-ſtove, and during the winter ſhould have but little water, but in ſummer they muſt be frequently refreſhed with it, but not given in too great plenty. The plants ſhould conſtantly remain in the bark-ſtove, and be treated in the ſame manner as other tender plants from thoſe countries. The third year from ſeed they will flower, but they do not produce ſeeds in England.

The fourth ſort grows naturally in Virginia, and ſeveral other parts of America; this hath very ſlender trailing ſtalks, which muſt be ſupported; in the places where it naturally grows, the branches faſten themſelves by their tendrils to whatever plants are near them, and extend to a great diſtance. In this country they require the aſſiſtance of a wall, and to have a good aſpect, for they are impatient of much cold, ſo ſhould be ſheltered in ſevere froſt; the branches are garniſhed with oblong leaves, which are green all the year; theſe are often ſingle at bottom, but upward are placed by pairs oppoſite at each joint; the flowers are produced at the wings of the leaves, which are yellow, and ſhaped like thoſe of the Foxglove. Theſe appear in Auguſt, but are not ſucceeded by pods in this country. This is propagated by ſeeds, which ſhould be ſown on a moderate hot-bed, and treated in the ſame manner as the firſt ſort. When theſe plants are planted in the full ground againſt walls, the ground about the roots ſhould be covered in the autumn with ſome old tanners bark to keep out the froſt in winter; and in very ſevere froſt, the branches ſhould be covered with mats, to prevent their being deſtroyed. With this management I have had the plants flower very well in the Chelſea garden.

The fifth ſort hath ſlender ſtalks like the former, which require the ſame ſupport; theſe are garniſhed with ſmall oval leaves, which are entire, placed oppoſite at every joint; at the ſame places come out the tendrils, by which they faſten themſelves to the plants which grow near them; theſe end in three diſtinct parts; the flowers come out from the wings of the leaves, which are ſhaped like thoſe of the former ſort, but are ſmaller, and are not ſucceeded by ſeeds in this country. This grows naturally in Carolina and the Bahama Iſlands, but will live in the open air, if it is planted againſt a wall to a ſouth aſpect, and ſheltered in very ſevere froſt. It is propagated in the ſame manner as the former ſort.

The ſixth ſort hath very weak ſlender branches, which put out tendrils at the joints, by which they faſten themſelves to the neighbouring plants: at each joint there are four leaves, two on each ſide oppoſite; theſe are oval pointed, and waved on their edges, of a bright green, and continue through the year; the branches ramble very far where they have room: the flowers are large, yellow, and are produced at the joints of the ſtalks, but are not ſucceeded by pods in this country. I received this ſort from La Vera Cruz, in New Spain; but it thrives againſt a warm wall in the open air very well, with the ſame treatment as the two former ſorts.

The ſeventh ſort grows naturally in South Carolina, where it ſpreads over the hedges, and at the ſeaſon of flowering, perfumes the air to a great diſtance; it alſo grows in ſome parts of Virginia, but not in ſo great plenty as at Carolina. The inhabitants there call it Yellow Jaſmine, I ſuppoſe from the ſweet odour of its flowers.

This riſes with ſlender ſtalks, which twiſt themſelves round the neighbouring plants, and mount to a conſiderable height; the branches are garniſhed with oblong pointed leaves, which come out ſingle and oppoſite to each other at every joint; theſe remain green through the year. The flowers come out from the wings of the leaves at every joint, ſometimes but two, at other times four at each joint; theſe ſtand erect, are trumpet-ſhaped, yellow, and have a very ſweet ſcent; and in the countries where they naturally grow, they are ſucceeded by ſhort taper pods, filled with ſmall winged ſeeds.

The plants of this ſort, when young, are impatient of cold, ſo muſt be ſheltered in the winter until they have obtained ſtrength, when they ſhould be planted againſt a warm wall, and in winter protected from froſt by coverings of mats, and the ground about their roots covered with tan. With this management I have had them flower very well in the Chelſea garden. It is propagated by ſeeds in the ſame manner as the former ſorts.

The eighth ſort was ſent me from Jamaica by the late Dr. Houſtoun. This riſes with an upright ſtem near twenty feet high, ſending out many lateral branches, covered with a white bark. The leaves come out oppoſite at the joints upon long foot-ſtalks; they are compoſed of five oval ſtiff leaves, which are joined in one center at their baſe, where they are narrow, but widen toward the top, where they are rounded and obtuſe. They are of a pale green, inclining to white on their under ſide; the flowers are produced at the ends of the branches four or five together, on very ſhort foot-ſtalks; they are narrow at bottom, but the tube enlarges upward, and at the top ſpreads open wide, of a pale bluiſh colour, and ſmell ſweet; they are ſucceeded by taper crooked pods about four inches long, which are filled with oval compreſſed ſeeds, with wings of a ſilver colour.

This ſort is a native of the warmer parts of America, therefore will not thrive in this country, but in a ſtove. It is propagated by ſeeds, which muſt be ſown on a hot-bed, and the plants treated in the ſame manner as the fourth ſort.

The ninth ſort I received from Barbadoes, by the title of White Wood. This riſes with an upright ſtem to the height of forty feet, in the natural country of its growth; and the ſeeds are diſperſed by wind to the neighbouring lands, where the plants come up in great plenty. This and the former ſort have been generally confounded, and ſuppoſed to be the ſame, but the growing plants are extremely different; for the under leaves of this are ſometimes compoſed of five, at other times of four oval leaves; and on the upper part of the branches, they come out ſingle, placed by pairs oppoſite: theſe are as large as thoſe of the Bay-tree, and of equal thickneſs, rounded at their end; each of theſe have a long foot-ſtalk, whereas thoſe of the former join at their baſe to one center. The flowers of this ſort are produced ſingle at the wings of the leaves, which have a narrow tube near two inches long, but ſpread open very wide at the top, where they are cut into five unequal ſegments, which are fringed on their borders. The flowers are white,

white, and have an agreeable odour, but the pod I have not ſeen.

The plants muſt be preſerved in the bark-ſtove, and treated as the fourth ſort. It is propagated by ſeeds, and will alſo take root from cuttings in the ſummer, if they are planted in pots, and plunged into a bark-bed. It has flowered ſeveral years in the Chelſea garden, in Auguſt.

The tenth ſort was ſent me from La Vera Cruz, by the late Dr. Houſtoun; this riſes with ligneous ſtalks, which put out tendrils at the joints, whereby they faſten themſelves to the neighbouring plants; the leaves come out on each ſide the branches, upon pretty long foot-ſtalks, two at each joint oppoſite, which are heart-ſhaped and entire, having a fine hairy down on their under ſide. The flowers grow in looſe ſpikes at the end of the branches, which are tubulous, and do not ſpread much at the top; they are of a Violet colour, and ſmell very ſweet. Theſe in their native country are ſucceeded by oval, hard, ligneous ſeed-veſſels, which open in four parts, and are full of compreſſed winged ſeeds.

This ſort is propagated by ſeeds, which muſt be ſown on a hot-bed, and the plants muſt be treated in the ſame manner as the third ſort, for they will not thrive in this country unleſs they are placed in the bark-ſtove.

The eleventh ſort grows naturally in the Bahama Iſlands, from whence Mr. Cateſby ſent the ſeeds in 1724, and many of the plants were raiſed in the gardens near London. This, in the country where it grows naturally, riſes to the height of twenty feet, ſending out many lateral branches, garniſhed with compound winged leaves, each having eleven alternate wings, with ſpear-ſhaped ſmall lobes, which grow alternate, and are entire; at the ends of the branches the flowers are produced in very looſe panicles; the foot-ſtalks branching into three or four, each ſuſtaining a ſingle blue flower, with a long ſwelling tube, cut into five unequal ſegments at the top, where it ſpreads open. The flowers are ſucceeded by oval ſeed-veſſels, which open in two parts, and are filled with flat winged ſeeds.

The twelfth ſort hath a woody ſtem, ſending out many branches, which have four narrow borders or wings running longitudinally, ſo as to reſemble a ſquare ſtalk; the leaves are produced by pairs, on each ſide the branches; they are heart-ſhaped, ſmooth, and have ſhort foot-ſtalks; theſe have tendrils coming out by their foot-ſtalks, which faſten themſelves to the plants which grow near them, and thereby riſe to a great height. The flowers are produced in ſmall cluſters from the wings of the leaves, which have pretty long tubes, ſpread open at the top, and are of a pale yellow colour; theſe are ſucceeded by flat pods a foot in length, which have two rows of flat winged ſeeds, joined to the intermediate partition.

This ſort was ſent me from Campeachy, where it naturally grows, and riſes to the tops of the talleſt trees, to whoſe branches theſe plants faſten themſelves by their tendrils or claſpers, and are thereby ſupported. This is propagated by ſeeds, which muſt be ſown on a hot-bed, and the plants treated in the ſame manner as the fourth ſort; for they will not thrive in this country, unleſs they have a warm ſtove, where the branches will riſe to the height of twenty feet in three years; and if permitted, will ſpread to a great diſtance. It has flowered in the garden at Chelſea, but doth not produce pods in England.

The thirteenth ſort was ſent me from Campeachy, by Mr. Robert Millar; this hath woody ſtalks, which riſe to a great height, climbing on the trees which grow near it, faſtening themſelves to their branches by its claſpers, and ſending out many ligneous branches, which are garniſhed with oval heart-ſhaped leaves, by fours, two on each ſide, growing oppoſite at the joints; theſe are covered on their under ſide with a ſoft hairy down, of a yellowiſh colour. The flowers are produced in looſe panicles at the end of the branches, which are ſhaped like thoſe of the Fox-glove, and are of a pale yellow colour, and are ſucceeded by flat pods a foot long, having a border on each ſide, and contain two rows of flat winged ſeeds.

This plant is tender, ſo muſt be conſtantly kept in the bark-ſtove, and treated in the ſame manner as the fourth ſort. It is propagated by ſeeds, which muſt be obtained from the country where it grows naturally, for it doth not produce any in England.

The fourteenth ſort was ſent me from La Vera Cruz in New Spain, by the late Dr. Houſton. This hath a woody ſtem covered with an Aſh-coloured bark, which riſes to the height of ten feet, ſending out many ſide branches, garniſhed with trifoliate leaves, placed oppoſite at each joint, which are very ſmooth, oval, and ending in points. The flowers come out at the extremity of the branches in looſe panicles, and are of a dirty white colour. Theſe are ſucceeded by flat narrow pods, containing two rows of flat winged ſeeds.

This ſort is propagated by ſeeds, which muſt be ſown on a hot-bed, and the plants afterward treated as the fourth ſort, and muſt conſtantly remain in the bark-ſtove.

BIHAI. See MUSA.

BINDWEED. See CONVOLVULUS.

BIRCH-TREE. See BETULA.

BISCUTELLA. Lin. Gen. Plant. 724. Thlaſpidium. Tourn. Inſt. R. H. 214. tab. 101. Buckler Muſtard, or Baſtard Mithridate Muſtard.

The CHARACTERS are,

The empalement is compoſed of four leaves, which are pointed. The flower hath four petals, placed in form of a croſs, which are obtuſe and ſpread open; it hath ſix ſtamina, four long and two ſhort, placed oppoſite, having ſingle ſummits. In the center is ſituated an orbicular compreſſed germen, ſupporting a ſingle permanent ſtyle, crowned with an obtuſe ſtigma; the germen afterward becomes a plain, compreſſed, erect capſule, with two convex lobes, having two cells, terminated by the rigid ſtyle, which is joined to the ſide of the partition, each cell containing one compreſſed ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliculoſa, the flower having four long, and two ſhort ſtamina, and are ſucceeded by very ſhort pods.

The SPECIES are,

1. BISCUTELLA (*Auriculata*) calycibus nectario utrinque gibbis, ſiliculis in ſtylum coëuntibus. Lin. Hort. Cliff. 329. *Buckler Muſtard, with the cup of the nectarium ſwelling on each ſide, and ſmall pods joined to the ſtyle.* Thlaſpidium hirſutum calyce floris auriculato. Inſt. R. H. 214.
2. BISCUTELLA (*Didyma*) ſiliculis orbiculato-didymis à ſtylo divergentibus. Hort. Cliff. 329. *Buckler Muſtard, with a double orbicular pod diverging from the ſtyle.* Thlaſpidium Monſpelienſe hieracii folio hirſuto. Tourn. Inſt. 214.
3. BISCUTELLA (*Apula*) hirſuta foliis oblongis dentatis ſemiamplexicaulibus floribus ſpicatis ſtylo breviore. *Hairy Buckler Muſtard, with oblong indented leaves which half embrace the ſtalk, flowers growing in ſpikes, and a ſhorter ſtyle.* Thlaſpidium Apulum ſpicatum. Tourn. Inſt. 214.

The firſt ſort grows naturally in the ſouth of France and Italy, where it riſes about a foot high; but in a garden generally grows near two feet high, dividing into ſeveral branches; and at every joint there is one oblong entire leaf a little indented, thoſe on the lower part of the ſtalk being broader and more obtuſe than thoſe on the upper. The flowers are produced at the ends of the branches in looſe panicles, which are compoſed of four obtuſe petals of a pale yellow colour; theſe are ſucceeded by double, round, compreſſed ſeed-veſſels, ſwelling in the middle, where is lodged a ſingle, round, flat ſeed, the ſtyle of the flower ſtanding upright between the two ſmall veſſels, joined to their borders.

The ſecond ſort grows naturally in the ſouth of France, Italy, and Germany, from whence I received

the ſeeds, and dried ſamples of the plant, which are not more than ſix inches high, though they are the entire plants with their roots, but in the garden they grow almoſt two feet high. This hath many long, narrow, hairy leaves, ſpreading near the ground, which are deeply indented on each ſide, reſembling thoſe of Hawkweed; from the center ariſes the ſtalk, which divides upward into many ſmall branches, having no leaves on them, and are terminated by looſe panicles of yellow flowers, compoſed of four petals, placed in form of a croſs. Theſe are ſucceeded by round compreſſed ſeed-veſſels like the former, but are ſmaller, and the ſtyle of the flowers bends from them.

The third ſort ſends out many oblong hairy leaves, which are ſlightly indented on their edges; from among theſe there ariſes a hairy branching ſtalk, which grows two feet high, and at each joint is placed one oblong indented leaf, which half embraces the ſtalk at the baſe; each branch is terminated by a cloſe ſpike of pale yellow flowers, which are ſucceeded by round compreſſed ſeed-veſſels like the other ſorts, but the ſtyle of the flower, which is joined to them, is ſhorter than thoſe of the other ſpecies.

Theſe are all annual plants, which periſh ſoon after they have perfected their ſeeds. Theſe ſhould be ſown either in ſpring, or the autumn, upon a border of light earth, in an open ſituation, where they are to remain for good. Thoſe which are ſown in autumn will come up in about three weeks, and the plants will live through the winter without any protection, ſo will flower earlier the following ſummer, whereby good ſeeds may always be obtained; whereas thoſe which are ſown in the ſpring, do, in bad ſeaſons, decay before their ſeeds are ripe. The autumnal plants flower in June, and the ſpring in July, and their ſeeds ripen about ſix weeks after; which, if permitted to ſcatter, there will be plenty of young plants produced without any care.

Theſe require no farther culture, but to keep them clean from weeds, and thin the plants where they are too cloſe, leaving them eight or nine inches aſunder. They are preſerved in the gardens of thoſe who are curious in botany, but they have no great beauty to recommend them. I have cultivated theſe ſorts many years, and have never obſerved either of them to vary, therefore make no doubt of their being diſtinct ſpecies.

BISERRULA. Lin. Gen. Plant. 800. Pelecinus. Tourn. Inſt. 417. tab. 234.

The CHARACTERS are,

The flower hath a tubulous empalement of one leaf, which is erect, and ſlightly indented at the top in five equal parts, the two upper ſtanding at a diſtance. The flower is papilionaceous, having a large roundiſh ſtandard, whoſe edges are reflexed. The wings are oblong, but ſhorter than the ſtandard; and the obtuſe keel is of the ſame length with the wings, bending upward. It hath ten ſtamina, nine of which are joined, and the other ſingle, with their ends pointing upward. In the center is ſituated an oblong compreſſed germen, ſupporting an awl-ſhaped ſtyle, crowned by a ſingle ſtigma; theſe are included in the keel. The germen afterward becomes a flat narrow pod, indented on both edges like the ſaw of the ſword fiſh, having two cells, filled with kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, the flower having ten ſtamina, joined in two bodies.

We have but one SPECIES of this genus, which is,

BISERRULA. (*Pelecinus.*) Hort. Cliff. 361. We have no Engliſh name for this plant. Pelecinus vulgaris. Tourn. Inſt. 417.

This is an annual plant, which grows naturally in Italy, Sicily, Spain, and the ſouth of France. It ſends out many angular ſtalks, which trail on the ground, ſubdivided into many branches, garniſhed with long winged leaves, compoſed of many pair of lobes, terminated by an odd one; theſe are heart-ſhaped: toward the upper part of the branches come out the foot-ſtalk of the flowers, which ſuſtains ſeveral ſmall Butterfly flowers, of a purpliſh colour, collected together, which are ſucceeded by plain pods, about one inch long, indented on both ſides the whole length, divided in the middle by a longitudinal nerve, containing two rows of kidney-ſhaped ſeeds.

It is propagated by ſeeds, which in this country ſhould be ſown in the autumn, on a bed of light earth, where the plants will come up in about three weeks, and will live in the open air very well. Theſe ſhould be ſown where they are deſigned to remain, or tranſplanted very young; for when they are large, they will not bear removing. When the plants are come up, they will require no other care, but to keep them clean from weeds; and where they are too near, they ſhould be thinned to about a foot diſtance from each other. They flower in June, and the ſeeds ripen in September.

The ſeeds of this plant may alſo be ſown in the ſpring, and treated in the ſame manner as before directed; but theſe will not flower till the middle or end of July, ſo unleſs the autumn proves warm, they will not ripen ſeeds; for which reaſon I have directed their being ſown in the autumn, as ſoon as they are ripe. Two or three of theſe plants may be allowed a place in gardens for the ſake of variety, but they have not much beauty.

BISLINGUA. See RUSCUS.

BISTORTA [ſo called, becauſe the root is turned or wreathed into various rings or ſpires,] Biſtort, or Snakeweed.

This genus is joined to the Polygonum by Dr. Linnæus. This plant flowers in May, and if the ſeaſon proves moiſt, will continue to produce new ſpikes of flowers till Auguſt: it may be propagated by planting the roots in a moiſt ſhady border, either in ſpring or autumn, which will ſoon furniſh the garden with plants, for it greatly increaſes by its creeping roots.

The roots of this plant have been recommended for tanning of leather, but the trouble of procuring them in a ſufficient quantity is too great to anſwer the intention.

BIVALVULAR, or Bivalve [of bivalvis] Huſk, is one that opens and gapes the whole length, like a door that opens in two parts.

BIXA. Lin. Gen. Plant. 581. Urucu. Sloan. Cat. Jam. Orleana. H. L. Mitella. Tourn. Inſt. 242. Anotta, by the French Roucou.

The CHARACTERS are,

It hath a plain, ſmall, obtuſe empalement, which is permanent; the flower hath a double ſeries of petals, the outer conſiſting of five, which are large, oblong, and equal, the inner of the ſame number and ſhape, but narrower. It hath a great number of briſtly ſtamina, which are but half the length of the petals, terminated by erect ſummits. In the center is ſituated an oval germen, ſupporting a ſlender ſtyle of the ſame length with the ſtamina, crowned by a bifid, compreſſed, parallel ſtigma. The germen afterward becomes an oval heart-ſhaped capſule, a little compreſſed, covered with ſharp briſtles, opening with two valves, with one cell, and filled with angular ſeeds, adhering to a linear receptacle, which runs longitudinally through the capſule.

This genus is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flower having many ſtamina and one ſtyle.

We have but one SPECIES of this genus, viz.

BIXA. (*Orellana.*) Hort. Cliff. 211. *The Arnotta, or Anotta, by the French Roucou.* Mitella Americana maxima tinctoria. *Achioti of Hernandez.*

This ſhrub grows naturally in the warm parts of America, where it riſes with an upright ſtem to the height of eight or ten feet, ſending out many branches at the top, forming a regular head. Theſe are garniſhed with heart-ſhaped leaves ending in a point, which have long foot-ſtalks, and come out without any order. The flowers are produced in looſe panicles at the end of the branches, of a pale Peach colour, having large petals, and a great number of briſtly ſtamina of the ſame colour, in the center. After the flower

flower is paſt, the germen becomes a heart-ſhaped, or rather a mitre-ſhaped ſeed-veſſel, covered on the outſide with briſtles, opening with two valves, and filled with angular ſeeds, covered with a red pulp or paſte, which colours the hands of thoſe who touch it, and is collected for the uſe of dyers and painters.

This plant is propagated by ſeeds, which are annually brought from the Weſt-Indies in plenty. Theſe ſhould be ſown in a ſmall pot, filled with light rich earth, and plunged into a hot-bed of tanners bark; where, if the bed is of a proper temperature of heat, the plants will appear in about a month after: when theſe are about an inch high, they ſhould be ſhaken out of the pot and carefully ſeparated, ſo as not to tear off their tender roots, and each planted in a ſmall pot filled with ſome rich light earth, and plunged into a freſh hot-bed of tanners bark, obſerving to ſhade them every day until they have taken new root; after which they muſt be treated as other tender plants from the ſame country, by admitting freſh air to them in proportion to the warmth of the ſeaſon; and when the heat of the tan declines, it ſhould be turned up to the bottom, and, if neceſſary, ſome freſh tan added to renew the heat. The plants muſt be refreſhed three times a week with water in ſummer, but they muſt not have it in great quantities, for their roots often rot with much wet. If the plants are raiſed early in the ſpring, and properly managed, they will be a foot and a half high by the autumn, when they ſhould be removed into the bark-ſtove, and plunged into the tan-bed. During the winter, they muſt have but little water, and while the plants are young, they muſt have a good ſhare of warmth, otherwiſe they are very ſubject to caſt their leaves, and frequently loſe their tops, which renders them unſightly. They muſt be conſtantly kept in the bark-ſtove, for thoſe plants which have been placed in a dry ſtove, have never made much progreſs. I have had many of theſe plants ſeven or eight feet high, with ſtrong ſtems and large heads, but have only had one produce flowers; nor have I heard of its flowering in any of the gardens in Europe, for in the Dutch gardens they have no plants of any ſize.

The paſte which ſurrounds the ſeeds is taken off, by ſteeping the ſeeds in hot water, and with the hands waſhed until the ſeeds are clean; then after pouring away the water, they leave the ſediment to harden, and make it up in balls, which are ſent to Europe, where they are uſed in dying and painting. It is alſo uſed by the Americans to dye their chocolate, and the natives uſed to paint their bodies with it when they went to the wars.

BLADDER-NUT. See STAPHYLEA.

BLATTARIA. See VERBASCUM.

BLIGHTS.

There is nothing ſo deſtructive to a fruit garden as blights; nor is there any thing in the buſineſs of gardening which requires more of our ſerious attention, than the endeavouring to prevent or guard againſt this great enemy of gardens.

In order therefore to remedy this evil, it will be neceſſary firſt to underſtand the true cauſes of blights; for, although many curious perſons have attempted to explain the cauſes of them, yet very few of them have come near the truth, except the Rev. and learned Dr. Hales, who hath, in his curious book, intitled Vegetable Statics, given us ſome accurate experiments upon the growth and perſpiration of plants, together with the various effects the air hath upon vegetables; that by carefully attending thereto, together with diligent obſervations, we need ſeldom to be at a loſs how to account for the cauſes of blights whenever they may happen.

But here I cannot help taking notice of the ſeveral cauſes of blights, as they have been laid down by ſome of our modern writers on gardening, together with their various methods preſcribed to prevent their deſtruction of fruits, &c.

Some have ſuppoſed, that blights are uſually produced by an eaſterly wind, which brings vaſt quantities of inſects eggs along with it from ſome diſtant place; which, being lodged upon the ſurface of the leaves and flowers of fruit-trees, cauſe them to ſhrivel up and periſh. To cure this diſtemper, they adviſe the burning of wet litter on the windward ſide of the trees, that the ſmoke thereof may be carried to them by the wind, which they ſuppoſe will ſtifle and deſtroy thoſe inſects, and thereby cure the diſtemper.

Others direct the uſe of Tobacco-duſt, or to waſh the trees with water wherein Tobacco-ſtalks have been infuſed for twelve hours, which, they ſay, will deſtroy theſe inſects, and recover the trees; and Pepper-duſt, ſcattered upon the bloſſoms of fruit-trees, has been recommended as very uſeful in this caſe: and there are ſome that adviſe the pulling off the leaves of the tree, as the beſt remedy when they are ſhrivelled up and wither; and to cut off the ſmaller branches when they produce crooked and unnatural ſhoots, and to ſprinkle the tree with a watering-pot, or a hand-engine.

Theſe conjectures concerning blights, how ſpecious ſoever they may appear at firſt ſight, yet, when duly conſidered, will be found far ſhort of the true cauſe, as will hereafter be ſhewn.

But let us now examine the true cauſes of blights, ſo far as we have been enabled to judge from repeated obſervations and experiments.

1. Blights then are often cauſed by a continued dry eaſterly wind for ſeveral days together, without the intervention of ſhowers, or any morning dew, by which the perſpiration in the tender bloſſoms is ſtopped, ſo that in a ſhort time their colour is changed, and they wither and decay; and if it ſo happen, that there is a long continuance of the ſame weather, it equally affects the tender leaves; for their perſpiring matter is hereby thickened and rendered glutinous, cloſely adhering to the ſurface of the leaves, and becomes a proper nutriment to thoſe ſmall inſects, which are always found preying upon the leaves and tender branches of fruit-trees, whenever this blight happens; but it is not theſe inſects which are the firſt cauſe of blights, as hath been imagined by ſome; though it muſt be allowed, that whenever theſe inſects meet with ſuch a proper food, they multiply exceedingly, and are inſtrumental in promoting the diſtemper; ſo that many times, when the ſeaſon proves favourable to them, and no proper care hath been taken to prevent their miſchief, it is ſurpriſing to think how whole walls of trees have ſuffered by this infection.

The beſt remedy for this diſtemper, that I have yet known ſucceed, is, gently to waſh and ſprinkle over the trees, from time to time, with common water (that is, ſuch as hath not had any thing ſteeped in it;) and the ſooner this is performed (whenever we apprehend danger,) the better; and if the young and tender ſhoots ſeem to be much infected, waſh them with a woollen cloth, ſo as to clear them, if poſſible, from all this glutinous matter, that their reſpiration and perſpiration may not be obſtructed; and if we place ſome broad flat pans or tubs of water near the trees, that the vapours exhaled from the water may be received by the trees, it will keep their tender parts in a ductile ſtate, and greatly help them; but whenever this operation of waſhing the trees is performed, it ſhould be early in the day, that the moiſture may be exhaled before the cold of the night comes on; eſpecially if the nights are froſty: nor ſhould it be done when the ſun ſhines very hot upon the wall, which would be ſubject to ſcorch up the tender bloſſoms.

Another cauſe of blights in the ſpring is, ſharp hoary froſts, which are often ſucceeded by hot ſunſhine in the day time; which is the moſt ſudden and certain deſtroyer of fruits that is known; for the cold of the night ſtarves the tender parts of the bloſſoms, and the ſun riſing hot upon the walls before the moiſture is dried from the bloſſoms (which, being in ſmall globules, collects the rays of the ſun,) a ſcalding heat

is thereby acquired; which ſcorches the tender flowers, and other parts of plants.

But that blights are frequently no more than an inward weakneſs or diſtemper in trees, will evidently appear, if we conſider how often it happens, that trees againſt the ſame wall, expoſed to the ſame aſpect, and equally enjoying the advantages of ſun and air, with every other circumſtance which might render them equally healthy, yet very often are obſerved to differ greatly in their ſtrength and vigour; and as often we obſerve the weak trees to be continually blighted, when the vigorous ones, in the ſame ſituation ſhall eſcape very well; which muſt, therefore, in a great meaſure, be aſcribed to their healthy conſtitution. This weakneſs, therefore, in trees, muſt proceed either from a want of a ſufficient ſupply of nouriſhment to maintain them in perfect vigour, or from ſome ill qualities in the ſoil where they grow, or, perhaps, from ſome bad quality in the ſtock, or inbred diſtemper of the buds or cyons, which they had imbibed from their mother tree, or from miſmanagement in the pruning, &c. all which are productive of diſtempers in trees, and of which they are with difficulty cured. Now, if this is occaſioned by a weakneſs in the tree, we ſhould endeavour to trace out the true cauſe; firſt, whether it has been occaſioned by ill management in the pruning, which is too often the caſe; for how common is it to obſerve Peach-trees trained up to the full length of their branches every year, ſo as to be carried to the top of the wall in a few years after planting, when at the ſame time the ſhoots for bearing have been ſo weak, as ſcarcely to have ſtrength to produce their flowers: but this being the utmoſt of their vigour, the bloſſoms fall off, and, many times, the branches decay, either the greateſt part of their length, or quite down to the place where they were produced; and this, whenever it happens to be the caſe, is aſcribed to a blight.

Others there are, who ſuffer their trees to grow juſt as they are naturally diſpoſed, during the ſummer ſeaſon, without ſtopping of ſhoots, or diſburdening their trees of luxuriant branches; by which means two, three, or four ſhoots ſhall exhauſt the greateſt part of the nouriſhment of the trees all the ſummer; which ſhoots, at the winter pruning, are entirely cut out; ſo that the ſtrength of the tree was employed only in nouriſhing uſeleſs branches, while the fruit branches are thereby rendered ſo weak, as not to be able to preſerve themſelves. The remedies to this evil ſhall be explained in the article of PRUNING Peach-trees, &c.

But if the weakneſs of the tree proceeds from an inbred diſtemper, it is the better way to remove the tree at firſt; and after renewing your earth, plant a new one in its place.

Or if your ſoil be a hot burning gravel or ſand, in which your Peach-trees are planted, you will generally find this will be conſtantly their caſe, after their roots have got beyond the earth of your borders; for which reaſon, it is much more adviſeable to dig them up, and plant Grapes, Figs, Apricots, or any other ſort of fruit, which may do well in ſuch a ſoil, rather than to be annually diſappointed of your hopes; for, by a variety of experiments, it hath been found, that Apricots attract and imbibe moiſture with a much greater force than Peaches and Nectarines; and conſequently, are better able to attract the nutritive particles from the earth, than the other, which require to be planted in a generous ſoil, capable of affording them a ſufficiency of nouriſhment without much difficulty: and it is in ſuch places we often ſee Peaches do wonders, eſpecially if aſſiſted by art; but as for the Vine and Fig-tree, they perſpire very ſlowly, and are very often in an imbibing ſtate (ſo that a great part of that fine racy flavour, with which their fruits abound when planted in a dry ſoil, is probably owing to thoſe refined aërial principles, which are collected when in a ſtate of reſpiration;) and therefore, as theſe trees delight not in drawing much watery nouriſhment from the earth, ſo they will much

better ſucceed in ſuch a ſoil, than in one that is more generous: we ſhould therefore always endeavour to ſuit the particular ſorts of fruits to the nature of our ſoil, and not pretend to have all ſorts of fruit good in the ſame.

But there is another ſort of blight, againſt which it is very difficult to guard our fruit-trees; this is ſharp, pinching, froſty mornings, which often happen at the time when the trees are in flower, or while the fruit is very young, and occaſion the bloſſoms or fruit to drop off; and, ſometimes, the tender parts of the ſhoots and leaves are greatly injured thereby.

The only method yet found out to prevent this miſchief, is, by carefully covering the walls, either with mats, canvas, reeds, &c. which being faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, and taking them off every day, if the weather permits, is the beſt and ſureſt method that hath yet been found ſucceſsful; which, although it has been ſlighted, and thought of little ſervice by ſome, yet the reaſon of their being not ſo ſerviceable as has been expected, was, becauſe they have not been rightly uſed, either by ſuffering the trees to remain too long covered; by which means the younger branches and leaves have been rendered too weak to endure the open air, when they are expoſed to it; which has often proved of worſe conſequence to trees, than if they had remained entirely uncovered, or by incautiouſly expoſing them to the air, after having been long covered.

Whereas, when the covering before-mentioned has been performed as it ought to be, it has proved very ſerviceable to fruits; and many times, when there has been almoſt a general deſtruction of fruits in the neighbouring gardens, there has been a plenty of them in ſuch places where they have been properly covered: and though the trouble may ſeem to ſome very great, yet, if theſe coverings are fixed near the upper part of the wall, and are faſtened to pullies, ſo as to be drawn up, or let down, it will be ſoon and eaſily performed; and the ſucceſs will ſufficiently repay the trouble.

But there is another ſort of blight that ſometimes happens later in the ſpring, viz. in April or May, which is often very deſtructive to orchards, and open plantations, and againſt which we know of no remedy. This is what is called a fire blaſt; which, in a few hours, hath not only deſtroyed the fruit and leaves, but, many times, parts of trees, and, ſometimes, entire trees have been killed by it.

This is ſuppoſed to be effected by volumes of tranſparent flying vapours, which, among the many forms they revolve into, may ſometimes approach ſo near to an hemiſphere, or hemicylinder, either in their upper or lower ſurfaces, as thereby to make the beams of the ſun converge enough to ſcorch the plants or trees they fall upon, in proportion to the greater or leſs convergency of the ſun's rays.

The learned Boerhaave, in his Theory of Chemiſtry, obſerves, "That thoſe white clouds which appear in "ſummer time, are, as it were, ſo many mirrors, "and occaſion exceſſive heat: theſe cloudy mirrors "are ſometimes round, ſometimes concave, polygonous, &c. When the face of the heavens is co"vered with ſuch white clouds, the ſun, ſhining "among them, muſt, of neceſſity, produce a ve"hement heat; ſince many of his rays, which would "otherwiſe, perhaps, never touch our earth, are "hereby reflected to us: thus, if the ſun be on one "ſide, and the clouds on the oppoſite one, they will "be perfect burning glaſſes: and hence the phæno"menon of thunder.

"I have ſometimes, continues he, obſerved a kind "of hollow clouds, full of hail and ſnow, during "the continuance of which the heat was extreme; "ſince, by ſuch condenſation, they were enabled to "reflect much more ſtrongly: after this came a ſharp "cold, and then the clouds diſcharged their hail in "great quantities, to which ſucceeded a moderate "warmth. Frozen concave clouds therefore, by

"their

" their great reflexions, produce a vigorous heat; " and the ſame, when reſolved, exceſſive cold."
Whence (as Dr. Hales obſerves) we ſee, that blaſts may be occaſioned by the reflexions of the clouds, as well as by the above-mentioned refraction of denſe tranſparent vapours.
Againſt this enemy to fruits, &c. as hath been ſaid, there is no guard to our fruit-trees, nor any remedy to cure it: but as this more frequently happens in cloſe plantations (where the ſtagnating vapours from the earth, and the plentiful perſpirations from the trees, are pent in for want of a free air to diſſipate and diſpel them; which are often obſerved, in ſtill weather, to aſcend in ſo plentiful a manner, as to be ſeen by the naked eye, but eſpecially with reflecting teleſcopes, ſo as to make a clear and diſtinct object become dim and tremulous,) than in thoſe that are planted at a greater diſtance, or are not ſurrounded with hills or woods; this directs us, in the firſt planting of kitchen-gardens and orchards, &c. that we ſhould allow a greater diſtance between the trees, and to make choice of clear healthy ſituations, that the air may freely paſs between the trees to diſſipate thoſe vapours before they are formed into ſuch volumes, whereby the circumambient air will be clear, and leſs ſubject to injuries; as alſo the fruits which are produced in this clearer air, will be much better taſted than thoſe that are ſurrounded with a thick rancid air; for as fruits are often in a reſpiring ſtate, they conſequently, by imbibing a part of theſe vapours, are rendered crude and ill-taſted, which is often the caſe with a great part of our fruits in England.

BLITUM. Lin. Gen. Plant. 14. Chenopodio-morus. Boerh. Ind. Morocarpus. Rupp. Strawberry Blite.

The CHARACTERS are,

It hath a tripartite ſpreading empalement, which is permanent; the flower hath no petals, but one briſtly ſtamina the length of the empalement, with a double ſummit. In the center is ſituated an oval pointed germen ſupporting two ſtyles, the length of the ſtamina, with a ſingle ſtigma. The empalement afterward becomes an oval compreſſed capſule, including one globular compreſſed ſeed, the ſize of the capſule.

This genus of plants is ranged in the ſecond order of Linnæus's firſt claſs, intitled Monandria Digynia, the flower having but one ſtamina and two ſtyles.

The SPECIES are,

1. BLITUM (*Capitatum*) capitellis ſpicatis terminalibus. Hort. Upſal. 3. *Blite with ſpikes terminated by little heads.* Chenopodio-morus major. Boerh. Ind. alt. 2. 91. *Commonly called Strawberry Blite, or Strawberry Spinach.*
2. BLITUM (*Virgatum*) capitellis ſparſis lateralibus. Hort. Upſal. 3. *Blite with ſmall heads growing ſcatteringly from the ſides of the ſtalks.* Chenopodio-morus minor. Boerh. Ind. alt. 2. 91. *Wild Atriplex with a Mulberry fruit.*
3. BLITUM (*Tartaricum*) foliis triangularibus acutè dentatis, capitellis ſimplicibus lateralibus. *Blite with triangular leaves ſharply indented, and ſingle heads proceeding from the ſides of the ſtalks.* Blitum fragiferum maximum polyſpermum. Amman. Ruth.

The firſt ſort grows naturally in Spain and Portugal, but hath been long preſerved in the Engliſh gardens. This is an annual plant, which hath leaves ſomewhat like thoſe of Spinach; the ſtalk riſes about two feet and a half high, the lower part of which is garniſhed with leaves of the ſhape with thoſe at bottom, but ſmaller; the upper part of the ſtalk hath flowers coming out in ſmall heads at every joint, and is terminated by a ſmall cluſter of the ſame: after the flowers are paſt, the little heads ſwell to the ſize of Wood Strawberries, and when ripe have the ſame appearance; being very ſucculent, and full of a purple juice, which ſtains the hands of thoſe who bruiſe them, of a deep purple colour.

The ſecond ſort grows naturally in the ſouth of France and Italy. This ſeldom grows more than one foot high, with ſmaller leaves than the firſt, but of the ſame ſhape; the flowers are produced at the wings of the leaves, almoſt the length of the ſtalk, which are ſmall, and collected in little heads, which are ſhaped like thoſe of the firſt, but ſmaller and not ſo deeply coloured.

The ſeeds of the third ſort were ſent me by the late Dr. Amman, who was profeſſor of botany at Peterſburgh. This riſes near three feet high; the leaves are triangular, ending in very acute points, as do alſo the indentures on the edges of the leaves. The flowers come out from the wings of the leaves in ſmall heads, which are ſucceeded by berries of the ſame ſhape and colour as thoſe of the firſt, but ſmaller. This ſort differs from the firſt in the ſhape and indentures of the leaves, and in having leaves placed between the berries the whole length of the ſtalk, which is not terminated by heads as the firſt, but hath leaves above the heads.

Theſe are all of them annual plants, which will drop their ſeeds if permitted, and the plants will come up in plenty the following ſpring: or if the ſeeds of either of the ſorts are ſown in March or April, upon a bed of common earth, in an open ſituation, the plants will come up in a month or five weeks after; and, if they are to remain in the place where they are ſown, will require no other care but to keep them clear from weeds, and to thin them out, ſo as to leave them ſix or eight inches apart; and in July the plants will begin to ſhew their berries, when they will make a pretty appearance. But many people tranſplant them into the borders of the flower-gardens, and others plant them in pots, to have them ready for removing to court-yards, or to place upon low walls, among other annual flowers, to adorn thoſe places.

When theſe plants are deſigned to be removed, they ſhould be tranſplanted before they ſhoot up their flower-ſtems, for they will not bear tranſplanting well afterward: and if they are planted in pots, they will require to be duly watered in dry weather, otherwiſe the plants will ſtint, and not grow to any ſize; and, as the flower-ſtems advance, they ſhould be ſupported by ſticks; for if they are not, the branches will fall to the ground, when the berries are grown pretty large and weighty.

BLOODWORT. See LAPATHUM.

BOCCONIA.

This plant was ſo called after the Reverend Paul Boccone, of Sicily, who has publiſhed ſome curious books of botany.

The CHARACTERS are,

The flower hath an empalement compoſed of two oval, obtuſe, concave leaves; it hath four narrow petals, with a great number of very ſhort ſtamina, crowned by erect ſummits, which are the length of the empalement. In the center is ſituated a roundiſh germen, contracted at both ends, ſupporting a ſingle ſtyle, which is biſid at the top, crowned by a ſingle ſtigma. The germen afterward becomes an oval fruit, contracted at both ends, and a little compreſſed, having one cell, full of pulp, including a ſingle round ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flower having many ſtamina and one ſtyle.

There is but one SPECIES of this genus at preſent known, which is,

BOCCONIA. (*Fruteſcens.*) Lin. Sp. Plant. 505. Bocconia racemoſa, ſphondylii folio tomentoſo. Plum. Nov. Gen.

This plant is called, by Sir Hans Sloane, in his Natural Hiſtory of Jamaica, Chelidonium majus arboreum, foliis quercinis; or *Greater Tree Celandine with Oak leaves.*

It is very common in Jamaica, and ſeveral other parts of America, where it grows to the height of ten or twelve feet, having a ſtrait trunk as large as a man's arm, which is covered with a white ſmooth bark. At the top it divides into ſeveral branches, on which the leaves are placed alternately. Theſe leaves are eight or nine inches long, and five or ſix broad, deeply

ſinuated, ſometimes almoſt to the mid-rib, and are of a fine glaucous colour; ſo that this plant makes a beautiful variety among other exotic plants in the ſtove. The whole plant abounds with a yellow juice like the greater Celandine, which is of an acrid nature; ſo that it is uſed by the inhabitants of America, to take off warts, and ſpots from the eyes.

It is propagated by ſeeds, which ſhould be ſown in a pot filled with light freſh earth, early in the ſpring, and plunged into a hot-bed of tanners bark, obſerving to water it now and then gently, otherwiſe the ſeeds will not grow. When the plants are come up, they ſhould be each tranſplanted into ſeparate ſmall pots filled with light ſandy earth, and plunged into the hot-bed again, obſerving to ſhade the glaſſes in the heat of the day, until the plants have taken root. They muſt be alſo gently watered, but it ſhould be done ſparingly while they are young; for their ſtems being very tender, and full of juice, will rot, if they receive too much moiſture; but after their ſtems are become woody, they will require it often, eſpecially in hot weather; when alſo they ſhould have a large ſhare of air, by raiſing the glaſſes of the hot-bed. The plants, in two months after tranſplanting, will have filled theſe ſmall pots with their roots; therefore they ſhould be ſhaken out of them, and planted into pots one ſize larger, filled with light freſh earth, and plunged into the bark-ſtove, where they ſhould have a good ſhare of freſh air in warm weather. With this management I have raiſed theſe plants upwards of two feet high in one ſeaſon, which were alſo very ſtrong in their ſtems: they muſt be conſtantly kept in the ſtove, being too tender to thrive in this country in any other ſituation. This plant has flowered in the phyſic garden at Chelſea, and perfected ſeeds; but if it were not to flower, the ſingular beauty of the plant renders it worthy of a place in every curious collection of plants; and it ſeems the Indians were very fond of it, for Hernandez tells us, the Indian kings planted it in their gardens.

BOERHAAVIA. This genus of plants was ſo named by Monſ. Vaillant, profeſſor of botany at Paris, in honour of the famous Dr. Boerhaave, who was profeſſor of botany, chemiſtry, and phyſic, in the univerſity of Leyden.

The CHARACTERS are,

The flower hath no empalement, and but one bell-ſhaped petal, which is pentangular and entire. It hath in ſome ſpecies one, and in others two ſhort ſtamina, crowned by a double globular ſummit. The germen is ſituated below the receptacle, ſupporting a ſhort ſlender ſtyle, with a kidney-ſhaped ſtigma; the germen afterward becomes a ſingle oblong ſeed, having no cover.

This genus of plants is ranged in the firſt ſection of Linnæus's firſt claſs, intitled Monandria Monogynia, the flower having but one ſtamina and a ſingle ſtyle.

The SPECIES are,

1. BOERHAAVIA (*Erecta*) caule erecto glabro. Lin. Sp. Plant. 3. *Boerhaavia with an erect ſtalk.* Boerhaavia Solanifolia erecta glabra, floribus carneis laxiùs diſpoſitis. Houſt. MSS.
2. BOERHAAVIA (*Diffuſa*) caule diffuſo. Lin. Sp. Plant. 3. *Boerhaavia with a diffuſed ſtalk.* Boerhaavia Solanifolia major. Vail. Deſ. 50.
3. BOERHAAVIA (*Scandens*) caule ſcandente floribus diandris. Lin. Sp. Plant. 3. *Boerhaavia with a climbing ſtalk.* Boerhaavia alſines folio ſcandens, floribus pallidè luteis majoribus in umbellæ modum diſpoſitis ſemine aſpero. Houſt. MSS.
4. BOERHAAVIA (*Coccinea*) foliis ovatis, floribus lateralibus compactis, caule hirſuto procumbente. *Boerhaavia with oval leaves, flowers coming from the wings of the leaves in cloſe heads, and a hairy trailing ſtalk.* Boerhaavia Solanifolia procumbens & hirſuta floribus coccineis compactis. Houſt. MSS.

The firſt ſort was diſcovered by the late Dr. Houſtoun, at La Vera Cruz, in 1731. This riſes with an upright ſmooth ſtalk, two feet high, and at each joint hath two oval pointed leaves growing oppoſite, upon foot-ſtalks, an inch long, of a whitiſh colour on their under ſide. At the joints, which are far aſunder, come out ſmall ſide branches, growing erect; theſe, as alſo the large ſtalk, are terminated by looſe panicles of fleſh-coloured flowers, which are each ſucceeded by oblong glutinous ſeeds.

The ſeeds of the ſecond ſort were ſent me by the ſame gentleman from Jamaica, where it naturally grows. This ſends out many diffuſed ſtalks a foot and a half or two feet long, garniſhed with ſmall roundiſh leaves at each joint. The flowers grow very ſcatteringly upon long branching foot-ſtalks from the wings of the leaves, as alſo at the end of the branches, which are of a pale red colour, and are ſucceeded by ſeeds like the former.

The third ſort was ſent me from Jamaica with the former. This ſends out ſeveral ſtalks from the root, which divide into many branches, and trail over whatever plants grow near them, and riſe to the height of five or ſix feet, garniſhed with heart-ſhaped leaves, growing by pairs at each joint upon long foot-ſtalks, which are of the colour and conſiſtence of thoſe of the greater Chickweed. The flowers grow in looſe umbels at the extremity of the branches, which are yellow, and are ſucceeded by ſmall, oblong, viſcous ſeeds.

The fourth ſort was ſent me from Jamaica with the two former: this ſends out many trailing hairy ſtalks, which divide into ſmaller branches, garniſhed with oval leaves at every joint; and at the wings of the leaves come out the naked foot-ſtalks, ſuſtaining a ſmall cloſe head of ſcarlet flowers, which are very fugacious, ſeldom ſtanding more than half a day before their petals drop; theſe are ſucceeded by ſhort oblong ſeeds.

The firſt, ſecond, and fourth ſorts are annual plants, which decay in autumn, but the third ſort is perennial: they are all tender plants, ſo will not thrive in the open air in England; they are propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring, and when the plants are fit to be removed, they ſhould be each planted in a ſmall pot and plunged into the hot-bed, and treated as other tender exotic plants. When they are grown too tall to remain under a common frame, a plant or two of each ſort ſhould be placed in the ſtove; the other may be turned out of the pots, and planted in a warm border, where, if the ſeaſon proves warm, they will perfect their ſeeds; but as theſe are ſubject to fail in cold ſeaſons, ſo thoſe in the ſtove will always ripen their ſeeds in autumn; the third ſort may be preſerved in a warm ſtove two or three years.

BOMBAX. Lin. Gen. Plant. 580. Ceiba. Plum. Nov. Gen. 32. Silk Cotton-tree.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is bell-ſhaped, erect, and quinquefid. The flower is quinquefid and ſpreading, the petals are oval and concave. It hath many awl-ſhaped ſtamina, which are the length of the petal, crowned with oblong incurved ſummits. In the center is ſituated the round germen, ſupporting a ſlender ſtyle the length of the ſtamina, with a round ſtigma. The empalement afterward becomes a large, oblong, turbinated capſule, having five cells, opening with five valves, which are ligneous, containing many roundiſh ſeeds, wrapped in a ſoft down, and fixed to a five-cornered column.

This genus of plants is ranged in the fifth order of Linnæus's ſixteenth claſs, intitled Monadelphia Polyandria, the flower having many ſtyles and ſtamina joined to a column.

The SPECIES are,

1. BOMBAX (*Ceiba*) floribus polyandris, foliis quinatis. Jacq. Amer. 26. *Silk Cotton-tree whoſe flowers have many ſtyles, and leaves with five lobes.* Ceiba viticis foliis caudice aculeato. Plum. Nov. Gen. 42.
2. BOMBAX (*Pentandrum*) floribus pentandris. Jacq. Amer. 26. *Silk Cotton-tree whoſe flowers have five ſtyles.* Ceiba viticis foliis caudice glabro. Plum. Nov. Gen. 42.

3. Bombax (*Villoſus*) foliis quinque-angularibus villoſis, caule geniculato. *Silk Cotton with five-cornered hairy leaves, and a jointed ſtalk.*

The firſt and ſecond ſorts grow naturally in both Indies, where they arrive to a great magnitude, being ſome of the talleſt trees in thoſe countries; but the wood is very light, and not much valued, except for making of canoes, which is the chief uſe made of them. Their trunks are ſo large, as when hollowed, to make very large ones. In Columbus's firſt voyage it was reported, there was a canoe ſeen at the iſland of Cuba, made of the hollowed trunk of one of theſe trees, which was ninety-five palms long, and of a proportional width, which would contain a hundred and fifty men: and ſome modern writers have affirmed, that there are trees of theſe ſorts now growing in the Weſt-Indies, ſo large, as not to be fathomed by ſixteen men, and ſo tall as that an arrow cannot be ſhot to their top.

Theſe trees generally grow with very ſtrait ſtems; thoſe of the firſt ſort are cloſely armed with ſhort ſtrong ſpines, but the ſecond hath very ſmooth ſtems, which in the young plants are of a bright green, but after a few years, they are covered with a grey, or Aſh-coloured bark, which turns to a brown as the trees grow older: they ſeldom put out any ſide branches till they arrive to a conſiderable height, unleſs their leading ſhoot be broken or injured. The branches toward their top are garniſhed with leaves compoſed of five, ſeven, or nine oblong ſmooth lobes, which are ſpear-ſhaped, and join to one center at their baſe, where they adhere to the long foot-ſtalk. Theſe fall away every year, ſo that for ſome time the trees are naked, and before the new leaves come out, the flower-buds appear at the end of the branches, and ſoon after the flowers expand, which are compoſed of five oblong purple petals, with a great number of ſtamina in the center; when theſe fall off, they are ſucceeded by oval fruit larger than a ſwan's egg, having a thick ligneous cover, which, when ripe, opens in five parts, and is full of a dark ſhort cotton, incloſing many roundiſh ſeeds as large as ſmall Peaſe.

The down which is incloſed in theſe ſeed-veſſels is ſeldom uſed, except by the poorer inhabitants to ſtuff pillows or chairs, but it is generally thought to be unwholeſome to lie upon.

Theſe two ſpecies have been ſuppoſed the ſame by many writers on natural hiſtory, who have affirmed, that the young trees only have prickles on their trunks, and as they grow old, their trunks become ſmooth; but from many years experience I can affirm, that the ſeeds which have been ſent me of the two ſorts, have always produced plants of the different kinds for which they were ſent, and continue the ſame in plants, which are more than twenty years growth.

There was a few years paſt a fine plant of another ſort in the garden of the late Duke of Richmond, at Goodwood, which was raiſed from ſeeds that came from the Eaſt-Indies. The ſtem of this was very ſtrait and ſmooth; the leaves were produced round the top upon very long foot-ſtalks, each being compoſed of ſeven or nine long, narrow, ſilky, ſmall lobes, joined at their baſe to the foot-ſtalk, in the ſame manner as thoſe of the two former, but they were much longer, and reflexed backward, ſo that at firſt ſight it appeared very different from either of them. This may be the ſpecies, titled by Jacquin, Bombax floribus pentandris, foliis ſeptenatis. Amer. 26.

The third ſort was ſent me from the Spaniſh Weſt-Indies, where it grows naturally, but I do not know to what ſize; the plants which have been raiſed here, have ſoft herbaceous ſtalks very full of joints, and do not appear as if they would become woody, for the plants of ſeveral years growth have ſoft pithy ſtems. The leaves come out on long hairy foot-ſtalks toward the top of the plants; theſe have the appearance of thoſe of the Mallow-tree, but are larger, and of a thicker conſiſtence; on their under ſide are covered with a ſhort, brown, hairy down, and are cut on their edges into five angles. Theſe plants have not as yet flowered in England, nor have I received any information what flower they produce; but by the pods and ſeeds, it appears evidently to be of this genus. The down incloſed in theſe pods, is of a fine purple colour; and I have been informed that the inhabitants of the countries where the trees grow naturally, ſpin it, and work it into garments, which they wear without dyeing it of any other colour.

I received a few years ſince, a few pods of another ſort from Panama, which were not ſo large as thoſe of the common, but were rounder. The down of theſe was red, but the plants raiſed from the ſeeds were ſo like thoſe of the third ſort, as not to be diſtinguiſhed from them, ſo I doubt of their being diſtinct ſpecies. I alſo received ſome ſeeds from Siam, which produced plants of the ſame kind, ſo that theſe trees may be common to many of the hot countries.

The plants are propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring; if the ſeeds are good, the plants will appear in a month, and thoſe of the two firſt ſorts will be ſtrong enough to tranſplant in a month after, when they ſhould be each planted in a ſmall pot, filled with freſh loamy earth, and plunged into a moderate hot-bed of tanners bark, being careful to ſhade them from the ſun till they have taken freſh root; after which they ſhould have a large ſhare of air admitted to them when the weather is warm, to prevent their being drawn up weak; they muſt alſo be frequently refreſhed with water, which muſt not be given in large quantities, eſpecially the third ſort, whoſe ſtalks are very ſubject to rot with much moiſture. In this bed they may remain till autumn (provided there is room for the plants under the glaſſes) but if the heat of the bed declines, the tan ſhould be ſtirred up, and freſh added to it; and if the plants have filled the pots with their roots, they ſhould be ſhifted into pots a little larger; but there muſt be care taken not to over-pot them, for nothing is more injurious to theſe plants, than to be put into large pots, in which they will never thrive. In the autumn they muſt be removed into the bark-ſtove, where they muſt conſtantly remain, being too tender to thrive in this country in any other ſituation. In winter they muſt have but little wet, eſpecially if they caſt their leaves; but in the ſummer they ſhould be frequently refreſhed with water, and in warm weather muſt have plenty of freſh air admitted to them. With this management the plants will make great progreſs, and in a few years will reach the glaſſes on the top of the ſtove, eſpecially if the building is not pretty lofty.

The plants make an agreeable variety in a large ſtove where they have room to grow, their leaves having a different appearance from moſt other plants; but as they are ſeveral years old before they flower in the countries where they grow naturally, there is little hopes of their producing any in England.

BONDUC. See Guilandina.

BONTIA. Lin. Gen. Plant. 709. Plum. Nov. Gen. 23. Hort. Elth. 49. Barbadoes Wild Olive.

The Characters are,

It hath a ſmall erect empalement, which is quinquifid and permanent. The flower is of the ringent kind, having a long cylindrical tube, gaping at the brim; the upper lip is erect and indented, the lower lip is trifid and turns backward. It hath four awl-ſhaped ſtamina, which are as long as the petal, and incline to the upper lip, two of them being longer than the other, having ſingle ſummits. In the center is ſituated the oval germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by a bifid obtuſe ſtigma. The germen afterward becomes an oval berry with one cell, including a nut of the ſame form.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds are included in a cover.

The

The Species are,

1. Bontia. (*Daphnoides.*) Lin. Sp. Plant. *Barbadoes Wild Olive.* Bontia arboreſcens thymelææ facie. Plum. Nov. Gen. 32.
2. Bontia (*Germinans*) foliis oppoſitis, pedunculis ſpicatis. Lin. Sp. Plant. 891. *Bontia with leaves growing oppoſite, and ſpiked foot-ſtalks of flowers.* Avicennia. Flor. Zeyl. 57.

The firſt ſort is greatly cultivated in the gardens at Barbadoes, for making of hedges, than which there is not a more proper plant for thoſe hot countries, it being an Evergreen, and of quick growth. I have been informed, that from cuttings (planted in the rainy ſeaſon, when they have immediately taken root) there has been a complete hedge, four or five feet high, in eighteen months. And as this will very well bear cutting, it is formed into a very cloſe thick hedge, which makes a beautiful appearance. In England it is preſerved in ſtoves, with ſeveral curious plants of the ſame country. It may be raiſed from ſeeds, which ſhould be ſown on a hot-bed early in the ſpring (that the plants may acquire ſtrength before winter.) When the plants are come up, they muſt be tranſplanted out each into a ſeparate half-penny pot filled with light freſh earth, and plunged into a moderate hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; after which they muſt have a large ſhare of air in warm weather, and be often refreſhed with water. In winter they muſt be placed in the ſtove, where they ſhould have a moderate degree of warmth, and but little water during that ſeaſon. In ſummer they muſt have a great ſhare of air, but will not do well if expoſed abroad, eſpecially in cold ſummers; ſo that they ſhould remain in the ſtove among plants which require a great ſhare of air, which may be admitted by opening the glaſſes in very hot weather. With this management, theſe plants will produce flowers and fruit in three or four years from ſeed. They may alſo be propagated by cuttings, which ſhould be planted in the ſummer. They muſt be put into pots filled with light rich earth, and plunged into a moderate hot-bed, obſerving to water and ſhade them until they have taken root; after which they muſt be treated as hath been directed for the ſeedling plants. Theſe plants being evergreen, and growing in a pyramidal form, make a pretty variety in the ſtove amongſt other exotic plants.

The ſecond ſort is ſuppoſed to be the Anacardium Orientale; but whether this is the true ſort, I cannot determine, having ſeen only the ſeeds of that plant, which are frequently brought to Europe for marking nuts; and thoſe have been too old to grow, ſo I cannot take upon me to determine how far Mr. Jacquin is right.

BONUS HENRICUS. See Chenopodium.

BORBONIA. Lin. Gen. Plant. 764.

The Characters are,

It hath a turbinated empalement of one leaf, cut at the top into five acute ſegments, which are ſtiff, pungent, and about half the length of the petals. The flower hath five leaves, and is of the butterfly ſhape. The ſtandard is obtuſe and reflexed. The wings are heart-ſhaped and ſhorter than the ſtandard. The keel hath obtuſe lunulated leaves. It hath nine ſtamina joined in a cylinder, and one upper ſtanding ſingle, turning up its point. Theſe have ſmall ſummits. In the center is ſituated an awl-ſhaped germen, ſupporting a ſhort ſtyle, crowned by an obtuſe indented ſtigma. The germen afterward becomes a round pointed pod terminated with a ſpine, having one cell, incloſing a kidney-ſhaped ſeed.

This genus of plants is ranged in the third order of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, the flower having ten ſtamina, nine of which are joined, and the other ſtands ſeparate.

The Species are,

1. Borbonia (*Lanceolata*) foliis lanceolatis multinerviis integerrimis. Lin. Sp. Plant. 707. *Borbonia with entire ſpear-ſhaped leaves having many nerves.* Geniſta Africana fruteſcens ruſci nervoſis foliis. Raii Hiſt. 3. 107.
2. Borbonia (*Cordata*) foliis cordatis multinerviis integerrimis. Lin. Sp. Plant. 737. *Borbonia with entire heart-ſhaped leaves having many nerves.* Spartium Africanum fruteſcens ruſci folio caulem amplexante. Com. Hort. Amſt. 2. 195.
3. Borbonia (*Trinervia*) foliis lanceolatis trinerviis integerrimis. Lin. Sp. Plant. 707. *Borbonia with entire ſpear-ſhaped leaves, having three veins.*

Theſe plants grow naturally at the Cape of Good Hope, from whence I received their ſeeds. In the natural place of their growth, they riſe to the height of ten or twelve feet; but in Europe they ſeldom are more than four or five, having ſlender ſtems divided into ſeveral branches, which are garniſhed with ſtiff leaves, placed alternately; thoſe of the firſt ſort are narrow, long, and end in a ſharp point. The flowers come out from between the leaves at the end of the branches in ſmall cluſters; theſe are yellow, and ſhaped like thoſe of the Broom. It flowers in Auguſt and September, but doth not perfect ſeeds in England.

The ſecond ſort hath broader leaves than the firſt: the ſtalks of this are ſlender, covered with white bark. The leaves embrace theſe at their baſe, where they are broadeſt, and are terminated by ſharp points like thoſe of Kneeholm, or Butchers Broom. The flowers are produced in ſmall cluſters at the end of the branches, which are the ſame ſhape and colour as thoſe of the former, but larger. This flowers at the ſame time with the former, but never produces ſeeds here.

The third ſort hath ſtronger ſtalks than either of the former, garniſhed almoſt their whole length, as are alſo the branches with ſtiff ſpear-ſhaped leaves, having three longitudinal nerves on each; theſe are placed cloſer together than thoſe of the other ſpecies. The flowers are produced at the extremity of the branches, each ſtanding on a ſeparate foot-ſtalk: they are of the ſame ſhape and colour with the former, but larger.

As theſe plants do not perfect their ſeeds in this country, they are with difficulty propagated here. The only method by which I have yet ſucceeded, hath been by laying down their young ſhoots; but theſe are commonly two years before they put out roots fit to be ſeparated from the old plant. In laying of theſe down, the joint which is laid in the ground ſhould be ſlit upward, as is practiſed in laying Carnations, and the bark of the tongue at bottom taken off. The beſt time to lay theſe down, is in the beginning of September; and the ſhoots moſt proper for this purpoſe, are thoſe which come out immediately, or very near the root, and are of the ſame year's growth, not only from their ſituation being near the ground, and thereby better adapted for laying, but theſe are alſo more apt to put out roots than any of the upper branches.

But where good ſeeds can be procured, that is the more eligible method of propagating the plants; for thoſe raiſed from the ſeeds make the ſtraiteſt plants, and are quicker of growth. When good ſeeds are obtained, they ſhould be ſown in pots filled with light loamy earth, as ſoon as they are received; which, if it happens in the autumn, the pots ſhould be plunged into an old bed of tanners bark, under a frame, where they may remain all the winter, being careful that they are ſecured from froſt, and have not much wet. In the ſpring, the pots ſhould be plunged into a hot-bed, which will bring up the plants in five or ſix weeks. When theſe are fit to remove, they ſhould be each planted into a ſeparate ſmall pot, filled with the like loamy earth, and plunged into a moderate hot-bed, obſerving to ſhade them until they have taken freſh root, as alſo to refreſh them with water, as they may require it. After this they muſt by degrees be inured to the open air, into which they ſhould be removed in June, and placed in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into the green-houſe, and placed where they may enjoy the air and ſun; during the

winter

winter ſeaſon, theſe plants muſt be ſparingly watered; but in ſummer, when they are placed abroad, they will require to be frequently refreſhed, but muſt not have too much water given them each time.

Theſe plants make a pretty variety in the green-houſe in winter, and as they do not require any artificial heat to preſerve them, they are worthy of a place in every garden where there is conveniency for keeping them.

BORDERS. The uſe of theſe in a garden, is to bound and incloſe parterres, to prevent them being injured by walking in them: theſe are commonly rendered very ornamental by means of the flowers, ſhrubs, &c. that are planted in them.

Theſe ought to be laid with a riſing in the middle, becauſe, if they are flat, they are not agreeable to the eye.

As for their breadth, five or ſix feet are often allowed for the largeſt, and four for the leſſer.

Borders are of four ſorts: thoſe are the moſt common, that are continued about parterres without any interruption, and are wrought with a gentle riſing in the middle, like an aſs's back, and planted with flowers.

The ſecond ſort of borders is ſuch as are cut into compartments, at convenient diſtances, by ſmall paſſages; and being alſo raiſed in the middle, as before-mentioned, are likewiſe ſet off with flowers.

The third ſort is ſuch as are laid even and flat without flowers, having only a verge of graſs in the middle, being edged with two ſmall paths, raked ſmooth and ſanded. Theſe are ſometimes garniſhed with flowering ſhrubs, and flowers of large growth, or with vaſes and flower-pots, placed regularly along the middle of the verge of graſs.

The fourth ſort is quite plain, and only ſanded, as in the parterres of orangery, and is filled with caſes ranged in a regular order along thoſe borders which are edged with Box on the ſides next to the walks; and on the other, with verges and graſs-work next the parterre.

Borders are either made ſtrait, circular, or in cants, and are turned into knots, ſcrolls, and other compartments.

Floriſts alſo make borders either along walks, or detached, and in theſe they raiſe their fineſt and choiceſt flowers. Theſe are frequently encompaſſed with border-boards painted green, which make them look exceeding neat.

But, in large parterres, this is not to be expected; ſince, if they be ſtocked with flowers ſucceeding one another in their ſeveral ſeaſons, it is ſufficient, ſo that nothing appears bare and naked.

It is uſual to diſcontinue the borders at the ends next to the houſe, that the embroidery and riſe of the parterre may not be hidden by the ſhrubs and flowering plants, and that the deſign may be better judged of.

Since the modern way of gardening has been introduced in England, all the French taſte of parterres, ſcroll-borders, and fret-work in Box, has been juſtly baniſhed our gardens: therefore I have only mentioned them here, to expoſe the taſte of thoſe architect-gardeners, who have no idea of the noble ſimplicity of an open lawn of graſs, properly bounded by plantations; but, inſtead of this, divide the part of the garden near the houſe, into various forms of borders edged with Box, with ſand, ſhell, or gravel-walks leading about them, by which the ground is cut into many angles, ſcrolls, &c. which is very hurtful to the eyes of a judicious perſon: therefore, where flowers are deſired, there may be borders continued round the extent of the lawn, immediately before the plantations of ſhrubs; which, if properly planted with hardy flowers to ſucceed each other, will afford a much more pleaſing proſpect than the ſtiff borders made in ſcrolls and compartments, after the French manner, can poſſibly do.

Theſe borders may be made ſix or eight feet wide, in proportion to the extent of the garden and ſize of the lawn: for a ſmall lawn ſhould not have very broad borders, nor ought a large lawn to be bounded by ſmall borders; ſo that a due proportion ſhould be always obſerved in the laying out of gardens.

BORRAGO [or Borago, which ſignifies much the ſame as courage, becauſe it is a good raiſer of the ſpirits.] Borage.

The CHARACTERS are,

The empalement is divided into five parts at the top, and is permanent. The flower is of one leaf, having a ſhort tube, ſpread wide open above, being divided into five acute ſegments at the brim. The chaps of the flower are crowned by five prominences, which are obtuſe and indented. It hath five ſtamina which are joined together, crowned by oblong ſummits. It hath four germen ſituated in the center, and a ſingle ſtyle longer than the ſtamina, ſupporting a ſingle ſtigma. The four germen afterward become ſo many roundiſh rough ſeeds, inſerted in the cavities of the receptacle, and included in the large ſwollen empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and a ſingle ſtyle.

The SPECIES are,

1. BORRAGO (*Officinalis*) foliis omnibus alternis, calycibus patentibus. Hort. Upſal. 34. *Borage with all the leaves growing alternate, and a ſpreading flower-cup.* Borrago floribus cæruleis. J. B.
2. BORRAGO (*Orientalis*) calycibus tubo corollæ brevioribus, foliis cordatis. Hort. Cliff. 45. *Borage with a flower-cup ſhorter than the tube of the flower, and heart-ſhaped leaves.* Borrago Conſtantinopolitana flore reflexo cæruleo calyce veſicareo. Tourn. Cor. 6.
3. BORRAGO (*Africana*) foliis ramificationum oppoſitis petiolatis, calycinis foliolis ovatis acutis erectis. Lin. Sp. 197. *African Borage with leaves growing oppoſite to the branches upon foot-ſtalks, and the leaves of the empalement oval, pointed, and erect.* Cynogloſſum Boraginis folio & facie Æthiopicum. Pluk. Alm.
4. BORRAGO (*Indica*) foliis ramificationum oppoſitis calycinis foliolis ſagittatis. Lin. Sp. Plant. 137. *Borage with oppoſite leaves on the branches, and ſpear-ſhaped leaves to the flower-cup.* Cynogloſſoides folio caulem amplexante. Iſnard. Act. Scien. 1718.

The firſt is the common Borage, whoſe flowers are uſed in medicine, and the herb for cool tankards in ſummer. Of this there are three varieties, which generally retain their difference from ſeeds; one hath a blue, the other a white, and another a red flower; and there is one which hath variegated leaves. Theſe variations have continued ſeveral years in the Chelſea garden, with very little alteration; but as they do not differ in any other reſpect from the common, I have only mentioned them as varieties.

This is an annual plant, which, if permitted to ſcatter its ſeeds, the plants will come up in plenty without care; the ſeeds may alſo be ſown either in ſpring or autumn, but the latter ſeaſon is preferable, on a ſpot of open ground where the plants are deſigned to remain; when the plants have obtained a little ſtrength, the ground ſhould be hoed to deſtroy the weeds, and the plants muſt be cut up where they are too near each other, leaving them eight or ten inches aſunder. After this they will require no farther care, unleſs the weeds ſhould come up again; then the ground ſhould be a ſecond time hoed over to deſtroy them, which, if well peformed, and in dry weather, will clear the ground from weeds, ſo it will require no more cleaning till the Borage is decayed. The plants which are raiſed in the autumn, will flower in May, but thoſe which are raiſed in the ſpring, will not flower till June; ſo that where a continuation of the flowers are required, there ſhould be a ſecond ſowing in the ſpring, about a month after the firſt; but this ſhould be on a ſhady border, and if the ſeaſon ſhould prove dry, the ground muſt be watered frequently, to bring up the plants; this latter ſowing will continue flowering till the end of ſummer.

The ſecond ſort was brought from Conſtantinople, where it grows naturally. This is a perennial plant, having thick fleſhy roots, which ſpread under the ſurface of the ground, and is thereby propagated with great facility. This ſends out many oblong heart-ſhaped leaves from the root, without any order, having long hairy foot-ſtalks; from the root ariſes the flower-ſtem, which is more than two feet high when fully grown, having at the joints a ſingle ſmall leaf without a foot-ſtalk. The upper part of the ſtalk branches out into ſeveral ſmall foot-ſtalks, which are terminated by looſe panicles of flowers; theſe are of a pale blue colour, and the petal is reflexed backward, ſo that the connected ſtamina and ſtyle are left naked. After the flowers are fallen, the four germen become ſo many rough ſeeds, ſmaller than thoſe of the common Borage. It flowers in March, and the ſeeds ripen in May. When the flower-ſtalk firſt appears, the flowers ſeem collected into a cloſe ſpike, ſome of which often ſpread open before the ſtalk is ſix inches high; but as the ſtalks advance, they divide into many looſe ſpikes.

It is eaſily propagated by the root, which may be parted in the autumn: theſe ſhould have a dry ſoil and a warm ſituation, for as the flower-ſtalks appear early in the ſpring, ſo when they are much expoſed, they are often killed by the froſt, and thereby prevented flowering; if theſe plants are planted in dry rubbiſh, they will not grow too luxuriant, ſo will not be in danger of ſuffering by froſt. Some of the ſeeds of this have ſcattered into the joints of an old wall in the Chelſea garden, where the plants have grown without care for ſome years, and are never injured by cold or heat.

The third and fourth ſorts grow naturally in Africa; theſe are both annual plants, which rarely riſe a foot high, having rough ſtalks; thoſe of the third ſort are ſet on by pairs oppoſite, with ſhort foot-ſtalks, but the leaves of the fourth cloſely embrace the ſtalks at their baſe; the flowers come out on ſhort foot-ſtalks from the wings of the leaves, and alſo at the top of the ſtalks. Thoſe of the third ſort are white, and thoſe of the fourth a pale fleſh colour; but neither of them make any great appearance, ſo are ſeldom cultivated but in botanic gardens for variety.

The ſeeds of theſe plants ſhould be ſown upon a hot-bed in March, and when the plants are ſtrong enough to be removed, they ſhould be each planted in a ſmall pot filled with light earth, and plunged into a new hot-bed to bring them forward, otherwiſe they will not perfect their ſeeds in this country; but in hot weather they muſt have a great ſhare of air, otherwiſe they will draw up weak, and fail before the ſeeds are ripe.

BOSEA, Yervamora, or Shrubby Golden-rod.

The CHARACTERS are,

It hath an empalement compoſed of five roundiſh, concave, equal leaves; it hath no corolla, but five awl-ſhaped ſtamina longer than the empalement, terminated by ſingle ſummits; and an oblong, oval, pointed germen, with two ſtigma ſitting cloſe upon it. The empalement afterward becomes a globular berry with one cell, incloſing one roundiſh ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

We have but one SPECIES of this plant, viz.

BOSEA. (*Yervamora.*) Lin. Hort. Cliff. 84. Arbor baccifera Canarienſis, ſyringiæ cærulæ foliis, purpurantibus venis, fructu monopyreno Yervamora Hiſpanorum. Pluk. Phyt. *Commonly called Golden-rod-tree.*

This plant is a native of the iſlands of the Canaries, and it hath alſo been ſince found in ſome of the Britiſh iſlands in America; but was firſt brought into England from the Canaries, and has been long an inhabitant of the Engliſh gardens; but I have not as yet ſeen any of theſe plants in flower, though I have had many old plants under my care more than forty years: it makes a pretty ſtrong woody ſhrub, growing with a ſtem as large as a middling perſon's leg; the branches come out very irregular, and make conſiderable ſhoots in ſummer, which ſhould be ſhortened every ſpring, to preſerve the heads of the plants in any tolerable order: theſe branches retain their leaves till toward the ſpring, when they fall away, and new leaves are produced ſoon after: it may be propagated by cuttings planted in the ſpring, and the plants muſt be houſed in winter, being too tender to live in the open air through the year, in this country.

BOSQUETS are little groves; ſo called from Boſchetto, Italian, which is a diminutive of Boſco, a wood or grove.

Theſe are ſmall compartments in gardens, which are formed of trees, ſhrubs, or tall large growing plants, planted in quarters; and are either diſpoſed regularly in rows, or in a more wild or accidental manner, according to the fancy of the owner: theſe quarters are commonly ſurrounded with Evergreen hedges, and the entrance formed into regular porticos with Yews, which are by far the beſt and moſt tonſile trees for this purpoſe. In the inſide of theſe quarters may be made ſome walks, either ſtrait or winding; which, if the quarters are large, ſhould be five or ſix feet broad, and may be laid with turf, and kept well mowed and rolled, which will render the walking much eaſier and pleaſanter than if the walks are only the common earth; which in ſmaller quarters cannot be otherwiſe, for if the trees are cloſe, and the walks narrow, ſo as to be ſhaded and over-hung by the trees, the graſs will not grow.

Theſe quarters may be alſo ſurrounded with hedges of Lime, Elm, Hornbeam, or Beech; which ſhould be kept well ſheared, and not ſuffered to riſe too high; that the heads of the trees may be fully ſeen over them, and the ſtems only hid from the ſight, when in the walks on the outſide of the quarters.

In the planting of theſe boſquets, you ſhould obſerve to mix the trees, which produce their leaves of different ſhapes, and various ſhades of green, and hoary or mealy leaves, ſo as to afford an agreeable proſpect: beſides, there is a great variety of different fruits, which theſe trees produce in autumn; which, altho' of little or no uſe, that we know of, yet have a very good effect, in affording an agreeable variety for ſome time after the leaves are gone; as the Euonymus, or Spindle-tree, the Opulus, or Marſh Elder, the Cock-ſpur Hawthorn, with many other ſorts, too numerous to mention in this place; whoſe berries afford food for the birds, ſo that they will be thereby invited to ſtay and harbour in theſe little groves, which by their different notes, will render theſe places very agreeable in the ſpring. But I would adviſe never to mix Evergreens with deciduous trees; for, beſides the ill effect it hath to the ſight (eſpecially in winter,) they ſeldom thrive well together; ſo that thoſe quarters where you intend to have Evergreens, ſhould be wholly planted therewith; and in the other parts mix as many varieties of different trees, which caſt their leaves, as you can conveniently; and alſo plant ſome of the largeſt growing flowers (eſpecially near the outſide of the quarters,) which will add greatly to the variety, if they have but air enough to grow; but if any of the Evergreen trees are mixed with the deciduous, it ſhould be only to border the wood.

Theſe boſquets are proper only for ſpacious gardens, being expenſive in their firſt making, as alſo in keeping.

BOTRYS. See CHENOPODIUM.

BOX-TREE. See BUXUS.

BRABEJUM, African Almond, vulgò.

The CHARACTERS are,

The flower hath no empalement; it is compoſed of four narrow obtuſe petals which are erect, forming a tube, but are turned backward at top; it hath four ſlender ſtamina which are inſerted in the bottom of the petals, and are of the ſame length, having ſmall ſummits. In the center is a ſmall hairy germen, ſupporting a ſlender ſtyle, crowned by a ſingle ſtigma; the germen afterward becomes an oval, hairy, dry berry, incloſing an oval nut.

This

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

We have but one SPECIES of this plant, viz.

BRABEJUM. (*Stellatifolium.*) Hort. Cliff. Amygdalus Æthipica, fructu holoſerico. Breyn. Cent. *African, or Ethiopian Almond.*

This tree is a native of the country about the Cape of Good Hope.

In Europe it ſeldom grows above eight or nine feet high, but in its native ſoil it is a tree of middling growth; but as it muſt be kept in pots, or tubs, being too tender to live through the winter in the open air, ſo we cannot expect to ſee it grow to a great ſize.

It riſes with an upright ſtem, which is ſoft, and full of pith within, covered with a brown bark. From the ſtem are ſent out horizontal branches at every joint, the lower being the longeſt, and every tier diminiſhing to the top, ſo as to form a ſort of pyramid. The branches are garniſhed with leaves at each joint, which are from four to five inches long, and half an inch broad in the middle, of a deep green on their upper ſide, but of a pale ruſſet colour on their under, indented on their edges, ſtanding on very ſhort foot-ſtalks. The flowers are produced toward the end of the ſhoots, coming out from between the leaves quite round the branches, which are of a pale colour, inclining to white; theſe appear early in the ſpring, and fall away without any fruit ſucceeding them in this country.

This plant is, with difficulty, propagated by layers; being often two years before they make roots ſtrong enough to be taken from the old plants; when the branches are laid down, it will be a good method to ſlit them at a joint (as is practiſed in laying Carnations) which will promote their taking root.

Theſe muſt have but little water given them, eſpecially in winter, for as the young ſhoots are chiefly pith within, ſo they are very ſubject to rot with much moiſture. The beſt time to make the layers is in April, juſt as the plants are beginning to ſhoot; the layers muſt always be made of the former year's ſhoots. As this plant is very difficult to propagate, ſo it is very ſcarce in Europe, there being very few in the Dutch gardens at preſent.

The plants muſt have a good green-houſe in winter, but in ſummer ſhould be ſet abroad in a ſheltered ſituation, where they will thrive, and annually produce flowers in the ſpring, ſo will make a pretty variety among other exotic plants in the green-houſe.

BRANCA URSINA. See ACANTHUS.

BRASSICA, the Cabbage.

The CHARACTERS are,

The empalement is compoſed of four upright, ſpear-ſhaped, ſmall leaves, which are convex at their baſe, and fall off. The flower is croſs-ſhaped, having four oval plain petals, which ſpread open, and are entire. It hath four oval nectarious glands, one being ſituated on each ſide of the ſhort ſtamina and pointal, and one on each ſide the empalement. It hath ſix ſtamina, which are awl-ſhaped and erect, two of which are oppoſite, and the length of the empalement, the other four are longer; theſe have erect pointed ſummits. It hath a taper germen the length of the ſtamina, having a ſhort ſtyle thicker than the germen, and crowned by an entire ſtigma. The germen afterward becomes a long taper pod, depreſſed on each ſide, and is terminated by the apex of the intermediate partition, which divides it into two cells, filled with round ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliquoſa, the flowers having four long and two ſhort ſtamina, and are ſucceeded by long pods.

I ſhall firſt enumerate the ſpecies, which are diſtinct, and afterward mention the varieties, which are cultivated for the table; for although moſt of theſe may be continued diſtinct by proper care, without alteration; yet as they are liable to vary when planted near each other for ſeeds, ſo we muſt not admit of their being different ſpecies. To this genus Dr. Linnæus has joined the Turnep, Navew, and Rocket, which by their generical characters, may in a ſyſtem of botany, come under the ſame title; but in a treatiſe of gardening, it may occaſion confuſion; therefore I ſhall treat of them under their former titles, by which they are generally known.

The SPECIES are,

1. BRASSICA (*Oleracea*) radice cauleſcente tereti carnoſâ. Hort. Cliff. 338. *Cabbage with a taper fleſhy ſtalk.* Braſſica capitata alba. C. B. P. 111. *The common white Cabbage.*
2. BRASSICA (*Napobraſſica*) radice cauleſcente orbiculari carnoſo, foliis ſeſſilibus. *Cabbage with a round fleſhy ſtalk, and leaves growing cloſe to the ſtalks.* Braſſica radice napiformi. Tourn. Inſt. R. H. 219. *Turnep-rooted Cabbage.*
3. BRASSICA (*Botrytis*) radice cauleſcente tereti carnoſâ, floralibus multicaulis. *Cabbage with a taper fleſhy ſtalk at the root, and many branching flower-ſtalks.* This is the Braſſica Cauliflora. Caſp. Bauh. Pin. 111. *The Cauliflower.*
4. BRASSICA (*Sylveſtris*) radice cauleque tenui ramoſo perenni foliis alternis marginibus inciſis. *Cabbage with a branching perennial ſtalk and root, and leaves growing alternate, which are cut on their edges.* Braſſica maritima arborea ſive procerior ramoſa. Mor. Hiſt. 2. p. 208. *Taller ſhrubby Sea Cabbage.*
5. BRASSICA (*Violacea*) foliis lanceolato-ovatis glabris indiviſis dentatis. Hort. Upſ. 191. *Cabbage with entire, oval, ſpear-ſhaped, ſmooth leaves, which are indented.*
6. BRASSICA (*Purpurea*) foliis oblongo-cordatis amplexicaulibus, integerrimis. *Cabbage with oblong heart-ſhaped leaves embracing the ſtalks, which are entire.* Braſſica campeſtris perfoliata flore purpureo. C. B. P. 112.
7. BRASSICA (*Orientalis*) foliis cordatis amplexicaulibus glabris. Lin. Sp. 931. *Colewort with heart-ſhaped ſmooth leaves which embrace the ſtalk.* Braſſica Orientalis perfoliata flore albo ſiliquâ quadrangulâ. Tourn. Cor. 16.
8. BRASSICA (*Gongylodes*) radice cauleſcente tereti, foliis inferioribus petiolatis ſuperioribus ſemiamplexicaulibus. *Cabbage with a taper ſtalk, the under leaves with foot-ſtalks, and the upper half embracing the ſtalk.* Napus Sylveſtris. C. B. P. 95. *The wild Navew, or Cole Seed.*

The VARIETIES of the firſt ſort are,

1. BRASSICA (*Sabauda*) ſabauda hyberna. Lob. Icon. *The Savoy Cabbage, commonly called Savoy.*
2. BRASSICA (*Rubra*) capitata rubra. C. B. P. 111. *The Red Cabbage.*
3. BRASSICA (*Pyramidalis*) capitata alba pyramidalis. *The Sugar-loaf Cabbage.*
4. BRASSICA (*Præcox*) capitata alba præcox. *The early Cabbage.*
5. BRASSICA (*Peregrina*) peregrina moſchum olens. H. R. Par. *Foreign Muſk Cabbage.*
6. BRASSICA (*Muſcovitica*) capitata alba minor Muſcovitica. H. A. *Small Ruſſia Cabbage.*
7. BRASSICA (*Capitata*) capitata alba compreſſa. Boerh. Ind. alt. 11. *The large ſided Cabbage.*
8. BRASSICA (*Viridis*) capitata viridis ſabauda. Boerh. Ind. 11. *The green Savoy.*
9. BRASSICA (*Laciniata*) fimbriata. C. B. P. 111. *The Borecole.*
10. BRASSICA (*Seleniſia*) fimbriata vireſcens. Boerh. Ind. 2. 12. *Green Borecole.*
11. BRASSICA (*Fimbriata*) fimbriata Siberica. Boerh. Ind. 2. 12. *Siberian Borecole, called by ſome Scotch Kale.*

The ſecond ſort is undoubtedly a diſtinct ſpecies, for I have always found the ſeeds produce the ſame, with this difference only, that in good ground the ſtalks will be much larger than in poor land.

The VARIETIES of the third ſort are,

1. BRASSICA Italica purpurea Broccoli dicta. Juſſ. *Purple Broccoli.*
2. BRASSICA Italica alba Broccoli dicta. Juſſ. *White Broccoli.*

The ſecond ſort, I believe, never varies, for I have cultivated it many years, and have not found it to alter,

alter. This grows naturally on the ſea-ſhore, near Dover. It hath a perennial branching ſtalk, in which it differs from all the other ſpecies. I have continued theſe three or four years, and have eaten the young ſhoots after they had been much frozen, when they were very ſweet and good; but at other times they are very ſtrong and ſtringy. In very ſevere winters, when the other ſorts are deſtroyed, this is a neceſſary plant, for the moſt ſevere froſts do not injure it. The leaves of this are inclining to a purple colour, and are placed alternately on the branches. The flower-ſtalks grow from the end of the branches, and ſpread out horizontally; but thoſe which ariſe from the center of the plants, grow erect, and ſeldom put out branches.

The third ſort, which is the Cauliflower, has been ſuppoſed a variety of the common Cabbage; but from more than fifty years experience in cultivating theſe plants, I could never find the leaſt appearance of either ſpecies approaching each other; and they are ſo different in their leaves, as to be eaſily diſtinguiſhed by perſons of ſkill, when the plants are young. But there is one eſſential difference between them in their flower-ſtems; for the common Cabbage puts out one upright ſtem from the center of the Cabbage, which afterward divides into ſeveral branches, whereas the Cauliflower ſends out many flower-ſtems from the part which is eaten; which is only a compact collection of the heads of theſe ſtalks, which afterward divides into ſo many ſtems, branching out into many ſpreading ſhoots, ſo as to form a large ſpreading head when in flower, but never riſes pyramidically like the Cabbage.

The two ſorts of Broccoli I take to be only varieties of the Cauliflower, for although theſe may with care be kept diſtinct, yet I doubt, if they were to ſtand near each other for ſeeds, if they would not intermix; and I am the rather inclined to believe this, from the various changes which I have obſerved in all theſe ſorts; for I have frequently had Cauliflowers of a green colour, with flower-buds regularly formed at the ends of the ſhoots, as thoſe of Broccoli, though the colour was different; and the white Broccoli approaches ſo near to the Cauliflower, as to be with difficulty diſtinguiſhed from it; yet when theſe are cultivated with care, and never ſuffered to ſtand near each other, when left to produce ſeeds, they may be kept very diſtinct in the ſame garden; for the variations of theſe plants is not occaſioned from the ſoil, but the mixing of the farina of the flowers with each other, where they are planted near together; therefore thoſe perſons who are curious to preſerve the ſeveral varieties diſtinct, ſhould never ſuffer the different kinds to ſtand near each other for ſeed.

The Cauliflower was firſt brought to England from the iſland of Cyprus, where I have been informed they are in very great perfection at preſent: but it is ſuppoſed, they were originally brought thither from ſome other country: moſt of the old writers mention it to have been brought from that iſland, to the different parts of Europe, ſo that from thence all the gardens in Europe have been ſupplied; and although this plant was cultivated in a few Engliſh gardens long ſince, yet it was not brought to any degree of perfection, till about 1680, at leaſt not to be ſold in the markets; and ſince the year 1700, they have been ſo much improved in England, as that ſuch of them as before were greatly admired, would at preſent be little regarded.

This plant has been much more improved in England, than in any other parts of Europe. In France they rarely have Cauliflowers till near Michaelmas, and Holland is generally ſupplied with them from England. In many parts of Germany there was none of them cultivated till within a few years paſt; and moſt parts of Europe are ſupplied with ſeeds from hence.

The eighth ſort, which is generally known by the title of Rape or Cole Seed, is much cultivated in the iſle of Ely, and ſome other parts of England for its ſeed, from which the Rape Oil is drawn; and it hath alſo been cultivated of late years in other places, for feeding of cattle, to great advantage. This hath been lately joined to the Napus Sativa, or Garden Navew, ſuppoſing them to be the ſame ſpecies; but I have cultivated both ſorts more than twenty years, and could never obſerve either of them to vary; indeed the whole appearance of the plants, is ſufficient to determine them as diſtinct ſpecies; but as the Garden Navew approaches nearer the Turnep than the Cabbage, ſo I ſhall treat of that under the title of RAPA.

The Cole Seed, when cultivated for feeding of cattle, ſhould be ſown about the middle of June. The ground for this ſhould be prepared in the ſame manner as for Turneps. The quantity of ſeeds for an acre of land, is from ſix to eight pounds, and as the price of the ſeeds is not great, ſo it is better to allow eight pounds; for if the plants are too cloſe in any part, they may be eaſily thinned when the ground is hoed. When the plants have put out ſix leaves, they will be fit to hoe, which muſt be performed in the ſame manner as is practiſed for Turneps, with this difference only, of leaving theſe much nearer together; for as they have fibrous roots and ſlender ſtalks, ſo they do not require near ſo much room. Theſe plants ſhould have a ſecond hoeing, about five or ſix weeks after the firſt, which, if well performed in dry weather, will entirely deſtroy the weeds, ſo they will require no farther culture. By the middle of November theſe will be grown large enough for feeding, when, if there is a ſcarcity of fodder, this may be either cut or fed down; but where there is not an immediate want of food, it had better be kept as a reſerve for hard weather, or ſpring feed, when there may be a ſcarcity of other green food. If the heads are cut off, and the ſtalks left in the ground, they will ſhoot again early in the ſpring, and produce a good ſecond crop in April, which may be either fed off, or permitted to run to ſeeds, as is the practice where this is cultivated for the ſeeds: but if the firſt is fed down, there ſhould be care taken that the cattle do not deſtroy their ſtems, or pull them out of the ground. As this plant is ſo hardy as not to be deſtroyed by froſt, ſo it is of great ſervice in hard winters for feeding of ewes; for when the ground is ſo hard frozen, as that Turneps cannot be taken up, theſe plants may be cut off for a conſtant ſupply. In ſeveral places where I have ſown this ſeed, I have found that one acre of land will produce as much food, as almoſt two acres of Turneps; and this will afford late food after the Turneps are run to ſeed; and if it is afterward permitted to ſtand for ſeed, one acre will produce as much as, at a moderate computation, will ſell for five pounds, clear of charges.

Partridges, pheaſants, turkeys, and moſt other fowl, are very fond of this plant; ſo that wherever it is cultivated, if there are any birds in the neighbourhood, they will conſtantly lie among theſe plants.

The ſeeds of this plant are ſown in gardens for winter and ſpring ſallads, this being one of the ſmall ſallad-herbs.

The common white, red, flat, and long-ſided Cabbages are chiefly cultivated for winter uſe: the ſeeds of theſe ſorts muſt be ſown the end of March, or beginning of April, in beds of good freſh earth; and in May, when the young plants will have about eight leaves, they ſhould be pricked out into ſhady borders, about three inches ſquare, that they may acquire ſtrength, and to prevent their growing long ſhanked.

About the beginning of June you muſt tranſplant them out, where they are to remain for good (which in the kitchen-gardens near London, is commonly between Cauliflowers, Artichokes, &c. at about two feet and a half diſtance in the rows;) but if they are planted for a full crop in a clear ſpot of ground, the diſtance from row to row ſhould be three feet and a half, and in the rows two feet and a half aſunder: if the ſeaſon ſhould prove dry when they are tranſplanted out,

out, you muſt water them every other evening, until they have taken freſh root; and afterwards, as the plants advance in height, you ſhould draw the earth about their ſtems with a hoe, which will keep the earth moiſt about their roots, and greatly ſtrengthen the plants: you muſt alſo obſerve to keep them clear from weeds, which are apt to draw the plants up tall (if ſuffered to grow amongſt them,) and often ſpoil them.

Theſe Cabbages will ſome of them be fit for uſe ſoon after Michaelmas, and will continue until the end of February, if they are not deſtroyed by bad weather; to prevent which, the gardeners near London pull up their Cabbages in November, and trench their ground up in ridges, laying their Cabbages againſt their ridges as cloſe as poſſible on one ſide, burying their ſtems in the ground: in this manner they let them remain till after Chriſtmas, when they cut them for the market; and although the outer part of the Cabbage be decayed (as is often the caſe in very wet or hard winters,) yet, if the Cabbages were large and hard when laid, the inſide will remain ſound.

The Ruſſian Cabbage was formerly in much greater eſteem than at preſent, it being now only to be found in particular gentlemens gardens, who cultivate it for their own uſe, and is rarely ever brought to the market. This muſt be ſown late in the ſpring of the year, and managed as thoſe before directed; with this difference only, that theſe muſt be ſooner planted out for good, and muſt have an open clear ſpot of ground, and require much leſs diſtance every way; for it is but a very ſmall hard Cabbage. Theſe will be fit for uſe in July or Auguſt, but will not continue long before they will break, and run up to ſeed. The beſt method to have theſe Cabbages good, is to procure freſh ſeeds from abroad every year, for it is apt to degenerate in England in a few years.

The early and Sugar-loaf Cabbages are commonly ſown for ſummer uſe, and are what the gardeners about London commonly call Michaelmas Cabbages. The ſeaſon for ſowing of theſe is about the end of July, or beginning of Auguſt, in an open ſpot of ground; and when the plants have got eight leaves, you muſt prick them into beds at about three inches diſtance every way, that the plants may grow ſtrong and ſhort ſhanked; and in the middle of October you ſhould plant them out for good; the diſtance that theſe require is, three feet row from row, and two feet and a half aſunder in the rows. The gardeners near London commonly plant theſe Cabbages upon the ſame ſpot of ground, where their winter Spinach is ſown; ſo that when the Spinach is cleared off in the ſpring, the ground will have a crop of Cabbages upon it; you muſt therefore clear off the Spinach juſt round each plant early in the ſpring, that with a hoe you may draw the earth up to the ſtem; and when all your Spinach is cleared off, which is commonly in the beginning of April, you muſt hoe down all the weeds, and draw up the earth again about your Cabbage plants.

In May, if your plants were of the early kind, they will turn in their leaves for cabbaging; at which time, the gardeners near London, in order to obtain them a little ſooner, tie in their leaves cloſe with a ſlender Oſier-twig to blanch their middle; by which means, they have them at leaſt a fortnight ſooner than they could have if they were left untied.

The early Cabbage being the firſt, we ſhould chooſe (if for a gentleman's uſe) to plant the fewer of them, and a greater quantity of the Sugar-loaf kind, which comes after them; for the early kind will not ſupply the kitchen long, generally cabbaging apace when they begin, and as ſoon grow hard, and burſt open; but the Sugar-loaf kind is longer before it comes, and is as ſlow in its cabbaging; and, being of an hollow kind, will continue good for a long time. I have known a large quarter of ground, which was planted with this ſort of Cabbage for market uſe, which hath afforded a ſupply for near three months together. This, though of ſingular ſervice to a gentleman's garden, is not ſo much for the advantage of the market gardener, who loves to have his ground cleared ſooner, that he may have another crop upon it, of Celery, Endive, &c. which is more to his purpoſe; for they, paying large rents for their land, are obliged to have as many crops in a year as poſſible.

Although I before have adviſed the planting out of Cabbages for good in October, yet the Sugar-loaf kind may be planted out in February, and will ſucceed as well as if planted earlier, with this difference only, that they will be later before they cabbage. You ſhould alſo reſerve ſome plants of the early kind in ſome well-ſheltered ſpot of ground, to ſupply your plantation, in caſe of a defect; for in mild winters many of the plants are apt to run to ſeed, eſpecially when their ſeeds are ſown too early, and in ſevere winters they are often deſtroyed.

The Savoy Cabbages are propagated for winter uſe, as being generally eſteemed the better when pinched by the froſt: theſe muſt be ſown about the middle of April, and treated after the manner as was directed for the common white Cabbage; with this difference, that theſe may be planted at a cloſer diſtance than thoſe; two feet and a half ſquare will be ſufficient. Theſe are always much better when planted in an open ſituation, which is clear from trees and hedges; for in cloſe places they are very ſubject to be eaten almoſt up by caterpillars, and other vermin, eſpecially if the autumn prove dry.

The Borecole may be alſo treated in the ſame manner, but need not be planted above one foot, aſunder in the rows, and the rows two feet diſtance: theſe are never eaten till the froſt hath rendered them tender, for otherwiſe they are tough and bitter.

The ſeeds of the Broccoli, (of which there are ſeveral kinds, viz. the Roman, or purple, and the Neapolitan, or white, and the black Broccoli, with ſome others; but the Roman is chiefly preferred to them all) ſhould be ſown about the latter end of May, or beginning of June, in a moiſt ſoil; and when the plants are grown to have eight leaves, tranſplant them into beds (as was directed for the common Cabbage;) and toward the middle of July they will be fit to plant out for good, which ſhould be into ſome well ſheltered ſpot of ground, but not under the drip of trees: the diſtance theſe require is about a foot and a half in the rows, and two feet row from row. The ſoil, in which they ſhould be planted, ought to be rather light than heavy, ſuch as are the kitchen gardens near London: if your plants ſucceed well (as there will be little reaſon to doubt, unleſs the winter prove extreme hard,) they will begin to ſhew their ſmall heads, which are ſomewhat like a Cauliflower, but of a purple colour, about the end of December, and will continue eatable till the middle of April.

The brown or black Broccoli is by many perſons greatly eſteemed, though it doth not deſerve a place in the kitchen-garden, where the Roman Broccoli can be obtained, which is much ſweeter, and will continue longer in ſeaſon: indeed, the brown ſort is much hardier, ſo that it will thrive in the coldeſt ſituations, where the Roman Broccoli is ſometimes deſtroyed in very hard winters. The brown ſort ſhould be ſown in the middle of May, and managed as hath been directed for the common Cabbage, and ſhould be planted at the ſame diſtance (which is about two feet and a half aſunder.) This will grow very tall, ſo ſhould have the earth drawn up to their ſtems as they advance in height. This doth not form heads ſo perfect as the Roman Broccoli; the ſtems and hearts of the plants are the parts which are eaten.

The Roman Broccoli (if well managed) will have large heads, which appear in the center of the plants, like cluſters of buds. Theſe heads ſhould be cut before they run up to ſeed, with about four or five inches of the ſtem; the ſkin of theſe ſtems ſhould be ſtripped off, before they are boiled: theſe will be

very tender and little inferior to Aſparagus. After the firſt heads are cut off, there will be a great number of ſide ſhoots produced from the ſtems, which will have ſmall heads to them, but are full as well flavoured as the large. Theſe ſhoots will continue good until the middle of April, when the Aſparagus will come in plenty to ſupply the table.

The Naples Broccoli hath white heads, very like thoſe of the Cauliflower, and eats ſo like it, as not to be diſtinguiſhed from it. This is much tenderer than the Roman Broccoli, ſo is not ſo much cultivated in England; for as the gardens near London generally produce great plenty of late Cauliflowers, which, if the ſeaſon prove favourable, will continue till Chriſtmas, the Naples Broccoli, coming at the ſame time, is not ſo valuable.

Beſides this firſt crop of Broccoli (which is uſually ſown the end of May,) it will be proper to ſow another crop the beginning of July, which will come in to ſupply the table the latter end of March, and the beginning of April, and being very young, will be extremely tender and ſweet.

In order to ſave good ſeeds of this kind of Broccoli in England, you ſhould reſerve a few of the largeſt heads of the firſt crop, which ſhould be let remain to run up to ſeed, and all the under ſhoots ſhould be conſtantly ſtripped off, leaving only the main ſtem to flower and ſeed. If this be duly obſerved, and no other ſort of Cabbage permitted to ſeed near them, the ſeeds will be as good as thoſe procured from abroad, and the ſort may be preſerved in perfection many years.

The manner of preparing the Naples Broccoli for the table is this: when your heads are grown to their full bigneſs (as may be eaſily known by their dividing, and beginning to run up,) then you ſhould cut them off, with about four inches of the tender ſtem to them; then ſtrip off the outer ſkin of the ſtem, and after having waſhed them, boil them in a clean linen cloth (as is practiſed for Cauliflowers,) and ſerve them up with butter, &c. and, if they are of a right kind, they will be tenderer than any Cauliflowers, though very like them in taſte.

The Turnep-rooted Cabbage was formerly more cultivated in England than at preſent, for ſince other ſorts have been introduced which are much better flavoured, this ſort has been neglected. There are ſome perſons who eſteem this kind for ſoups; but it is generally too ſtrong for moſt Engliſh palates, and is ſeldom good but in hard winters, which will render it tender and leſs ſtrong.

It may be propagated by ſowing the ſeeds in April, on a bed of light freſh earth; and when the plants are come up about an inch high, they ſhould be tranſplanted out in a ſhady border, at about two inches diſtance every way, obſerving to water them until they have taken root; after which time they will require no other culture but to keep them clear from weeds, unleſs the ſeaſon ſhould prove extremely dry; in which caſe it will be proper to water them every four or five days, to prevent their being ſtinted by the mildew, which is ſubject to ſeize theſe plants in very dry weather.

In the beginning of June, the plants ſhould be tranſplanted out where they are to remain, allowing them two feet diſtance every way, obſerving to water them until they have taken root; and as their ſtems advance, the earth ſhould be drawn up to them with a hoe, which will preſerve a moiſture about their roots, and prevent their ſtems from drying and growing woody, ſo that the plants will grow more freely; but it ſhould not be drawn very high, for as it is the globular part of the ſtalk which is eaten, ſo that ſhould not be covered. In winter they will be fit for uſe, when they ſhould be cut off, and the ſtalks pulled out of the ground, and thrown away, as being good for nothing after the ſtems are cut off.

The curled Colewort of Siberian Borecole, is now more generally eſteemed than the former, being extreme hardy, ſo is never injured by cold, but is always ſweeter in ſevere winters than in mild ſeaſons. This may be propagated by ſowing the ſeeds the beginning of July; and when the plants are ſtrong enough for tranſplanting, they ſhould be planted in rows about a foot and a half aſunder, and ten inches diſtance in the rows; this work ſhould be performed at a moiſt time, when the plants will ſoon take root, and require no farther care. Theſe will be fit for uſe after Chriſtmas, and continue good until April, ſo that they are very uſeful in a family.

The Muſk Cabbage has, through negligence, been almoſt loſt in England, though for eating it is one of the beſt kinds we have; but being tenderer than many other ſorts, is not profitable for gardeners who ſupply the markets; but thoſe who cultivate them for their own table, ſhould make choice of this, rather than any of the common Cabbage, for it is always looſer, and the leaves more criſp and tender, and has a moſt agreeable muſky ſcent when cut. This may be propagated in the ſame manner as the common Cabbage, and ſhould be allowed the ſame diſtance. It will be fit for uſe in October, November, and December; but, if the winter proves hard, theſe will be deſtroyed much ſooner than the common ſort.

The common Colewort, or Dorſetſhire Kale, is now almoſt loſt near London, where the markets are uſually ſupplied with Cabbage plants, inſtead of them; and theſe being tenderer, and more delicate in winter, are much more cultivated than the common Colewort, which is better able to reſiſt the cold in ſevere winters than thoſe, but is not near ſo delicate till pinched by froſt. And ſince the winters in England have been generally temperate of late years, the common Cabbage plants have conſtantly been cultivated by the gardeners near London, and ſold in the markets as Coleworts, which, if they are of the Sugar-loaf kind, is one of the ſweeteſt greens from December to April yet known. Indeed, where farmers ſow Coleworts to feed their milch-cattle in the ſpring, when there is a ſcarcity of herbage, the common Colewort is to be preferred, as being ſo very hardy that no froſt will deſtroy it. The beſt method to cultivate this plant in the fields is, to ſow the ſeeds about the beginning of July, chooſing a moiſt ſeaſon, which will bring up the plants in about ten days or a fortnight; the quantity of ſeed for an acre of land is nine pounds: when the plants have got five or ſix leaves, they ſhould be hoed, as is practiſed for Turneps, cutting down all the weeds from amongſt the plants, and alſo thinning the plants where they are too thick; but they ſhould be kept thicker than Turneps, becauſe they are more in danger of being deſtroyed by the fly: this work ſhould be performed in dry weather, that the weeds may be killed; for if it ſhould prove moiſt ſoon after, the weeds will take root again, and render the work of little uſe. About ſix weeks after, the plants ſhould have a ſecond hoeing, which, if carefully performed in dry weather, will entirely deſtroy the weeds, and make the ground clean, ſo that they will require no farther culture. In the ſpring they may either be drawn up and carried out to feed the cattle, or they may be turned in to feed upon them as they ſtand; but the former method is to be preferred, becauſe there will be little waſte; whereas, when the cattle are turned in amongſt the plants, they will tread down and deſtroy more than they eat, eſpecially if they are not fenced off by hurdles.

The perennial Colewort is alſo little cultivated in the gardens near London at preſent. This is very hardy, and may be cultivated in the ſame manner as the former ſort. This will continue two years before it runs up to ſeed, and will afterwards produce many ſide ſhoots, and in poor land will continue three or four years; but in rich ſoils it will not laſt ſo long. This may be uſed as the former ſort, to feed cattle; for it is not ſo good for the table (unleſs in very ſevere froſt) as the plants which are now cultivated for that purpoſe.

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The fifth ſort came from China, where it is cultivated as an eſculent plant; of this there are two or three varieties which I have cultivated ſome years, but I find them as variable as our common Cabbage. Theſe are annual plants, which, if ſown in April, will flower in July, and perfect their ſeeds in October. They never cloſe their leaves to form a head, like the common Cabbage, but grow open and looſe, more like the wild Navew, and are very unfit for the table. As theſe are generally in their perfection for uſe the beginning of July, I imagined their ſtrong flavour and toughneſs might be occaſioned by the warmth of the ſeaſon; therefore I ſowed ſome of the ſeeds in July, that I might make trial of them in winter; but in the midſt of froſt, I found them much worſe than our common Colewort, ſo I thought them not worth propagating.

The other two ſorts of Cabbage are varieties fit for a botanic garden, but are plants of no uſe. Theſe may be propagated by ſowing their ſeeds on a bed of light earth, early in the ſpring, in the place where they are deſigned to remain (for they do not bear tranſplanting well.) When the plants are come up pretty ſtrong, they ſhould be thinned, ſo as to leave them four or five inches apart; and they muſt be conſtantly kept clear from weeds. In June they will flower; and their ſeeds will ripen the beginning of Auguſt, which, if permitted to fall, the plants will come up, and maintain themſelves without any farther care but to keep them clear from weeds. They are annual plants, and periſh when they have perfected their ſeeds.

The beſt method to ſave the ſeeds of all the beſt ſorts of Cabbages is, about the end of November you ſhould make choice of ſome of your beſt Cabbages, which you ſhould pull up, and carry to ſome ſhed, or other covered place, where you ſhould hang them up for three or four days by their ſtalks, that the water may drain from between their leaves; then plant them in ſome border, under a hedge or pale, quite down to the middle of the Cabbage, leaving only the upper part of the Cabbage above ground, obſerving to raiſe the earth about it, ſo that it may ſtand a little above the level of the ground; eſpecially if the ground is wet, they will require to be raiſed pretty much above the ſurface.

If the winter ſhould prove very hard, you muſt lay a little ſtraw or Peaſe-haulm lightly upon them, to ſecure them from the froſt, taking it off as often as the weather proves mild, leſt by keeping them too cloſe they ſhould rot. In the ſpring of the year theſe Cabbages will ſhoot out ſtrongly, and divide into a great number of ſmall branches: you muſt therefore ſupport their ſtems, to prevent their being broken off by the wind; and if the weather ſhould be very hot and dry when they are in flower, you ſhould refreſh them with water once a week all over the branches, which will greatly promote their ſeeding, and preſerve them from mildew.

When the pods begin to change brown, you will do well to cut off the extreme part of every ſhoot with the pods, which will ſtrengthen your ſeeds; for it is generally obſerved, that thoſe ſeeds which grow near the top of the ſhoots, are very ſubject to run to ſeed before they cabbage; ſo that by this there will be no loſs, but a great advantage, eſpecially if you have more regard to the quality than to the quantity of the ſeeds, which indeed is not always the caſe, when it is intended for ſale; but thoſe who ſave it for their own uſe, ſhould be very careful to have it good.

When your ſeeds begin to ripen, you muſt be particularly careful, that the birds do not deſtroy it; for they are very fond of theſe ſeeds. In order to prevent their miſchief, ſome uſe old nets, which they throw over their ſeeds, to prevent their getting to it: but this will not always do, for, unleſs the nets are very ſtrong, they will force their way thro' them, as I have often ſeen; but the beſt method I know, is to get a quantity of birdlime, and dawb over a parcel of ſlender twigs, which ſhould be faſtened at each end to ſtronger ſticks, and placed near the upper part of the ſeed, in different places, ſo that the birds may alight upon them, by which means they will be faſtened thereto, where you muſt let them remain a conſiderable time, if they cannot get off themſelves: and although there ſhould be but few birds caught, yet it will ſufficiently terrify the reſt, that they will not come to that place again for a conſiderable time after (as I have experienced.)

When your ſeed is fully ripe, you muſt cut it off; and, after drying, threſh it out, and preſerve it in bags for uſe.

But in planting Cabbages for ſeed, I would adviſe never to plant more than one ſort in a place, or near one another: as for example, never plant red and white Cabbages near each other, nor Savoy with either white or red Cabbages; for I am very certain they will, by the commixture of the effluvia, produce a mixture of kinds; and it is wholly owing to this neglect, that the gardeners rarely ſave any good red Cabbage-ſeed in England, but are obliged to procure freſh ſeeds from abroad, as ſuppoſing the ſoil or climate of England alters them from red to white, and of a mixed kind between both; whereas, if they would plant red Cabbages by themſelves for ſeeds, and not ſuffer any other to be near them, they might continue the kind as good in England, as in any other part of the world; for in the Dutch gardens, from whence the beſt ſeeds of red Cabbages are procured, they cultivate no other ſort.

Cauliflowers have of late years been ſo far improved in England, as to exceed in goodneſs and magnitude what are produced in moſt parts of Europe; and by the ſkill of the gardener, are continued for ſeveral months together; but the moſt common ſeaſon for the great crop, is in May, June, and July. I ſhall therefore begin with directions for obtaining them in this ſeaſon.

Having procured a parcel of good ſeed, of an early kind, you muſt ſow it about the twenty-firſt of Auguſt, upon an old Cucumber or Melon-bed, ſifting a little earth over the ſeeds, about a quarter of an inch thick; and if the weather ſhould prove extreme hot and dry, you ſhould ſhade the bed with mats, to prevent the earth from drying too faſt, which would endanger the ſpoiling your ſeed; and give it gentle waterings, as you may ſee occaſion. In about a week's time your plants will appear above ground, when you muſt take off your coverings by degrees, but do not expoſe them too much to the open ſun at firſt. In about a month's time after ſowing, your plants will be fit to prick out, you ſhould therefore put ſome freſh earth upon your old Cucumber or Melon-beds; or where theſe are not to be had, ſome beds ſhould be made with a little new dung, which ſhould be trodden down cloſe, to prevent the worms from getting thro' it; but it ſhould not be hot dung, which would be hurtful to the plants at this ſeaſon, eſpecially if it proves hot; into this bed you ſhould prick your young plants, at about two inches ſquare, obſerving to ſhade and water them at firſt planting; but do not water them too much after they are growing, nor ſuffer them to receive too much rain, if the ſeaſon ſhould prove wet, which would be apt to make them black ſhanked (as the gardeners term it, which is no leſs than a rottenneſs in their ſtems,) and is the deſtruction of the plants ſo affected.

In this bed they ſhould continue till about the thirtieth of October, when they muſt be removed into the place where they are to remain during the winter ſeaſon, which, for the firſt ſowing, is commonly under bell or hand-glaſſes, to have early Cauliflowers, and theſe ſhould be of an early kind: but in order to have a ſucceſſion during the ſeaſon, you ſhould be provided with another more late kind, which ſhould be ſown four or five days after the other, and managed as was directed for them.

In order to have very early Cauliflowers, you ſhould make choice of a good rich ſpot of ground, that is well defended from the north, eaſt, and weſt winds, with

with hedges, pales, or walls; but the firſt is to be preferred, if made with reeds, becauſe the winds will fall dead in theſe, and not reverberate as by pales or walls. This ground ſhould be well trenched, burying therein a good quantity of rotten dung; then level your ground, and if it be naturally a wet ſoil, you ſhould raiſe it up in beds about two feet and a half, or three feet broad, and four inches above the level of the ground; but if your ground is moderately dry, you need not raiſe it at all: then plant your plants, allowing about two feet ſix inches diſtance from glaſs to glaſs, in the rows, always putting two good plants under each glaſs, which may be at about four inches from each other; and if you deſign them for a full crop, they may be three feet and a half, row from row: but if you intend to make ridges for Cucumbers or Melons between the rows of Cauliflower plants (as is generally practiſed by the gardeners near London,) you muſt then make your rows eight feet aſunder.

When you have planted your plants, if the ground is very dry, you ſhould give them a little water, and then ſet your glaſſes over them, which may remain cloſe down upon them, until they have taken root, which will be in about a week or ten days time, unleſs there ſhould be a kindly ſhower of rain; in which caſe you may ſet off the glaſſes, that the plants may receive the benefit of it; and in about ten days after planting, you ſhould be provided with a parcel of forked ſticks or bricks, with which you ſhould raiſe your glaſſes about three or four inches on the ſide toward the ſouth, that your plants may have free air. In this manner your glaſſes ſhould remain over the plants night and day, unleſs in froſty weather, when you ſhould ſet them down as cloſe as poſſible: or if the weather ſhould prove very warm, which many times happens in November, and ſometimes in December; in this caſe, you ſhould keep your glaſſes off in the day-time, and put them on only in the night, leſt, by keeping the glaſſes over them too much, you ſhould draw them into flower at that ſeaſon, which is many times the caſe in mild winters, eſpecially if unſkilfully managed.

Toward the latter end of February, if the weather proves mild, you ſhould prepare another good ſpot of ground, to remove ſome of the plants into from under the glaſſes, which ſhould be well dunged and trenched (as before;) then ſet off the glaſſes, and, after making choice of one of the moſt promiſing plants under each glaſs, which ſhould remain for good, take away the other plant, by raiſing it up with a trowel, &c. ſo as to preſerve as much earth to the root as poſſible; but have a great regard to the plant that is to remain, not to diſturb or prejudice its roots: then plant your plants which you have taken out, at the diſtance before directed, viz. if for a full crop, three feet and a half, row from row; but if for ridges of Cucumbers between them, eight feet, and two feet four inches diſtance in the rows: then, with a ſmall hoe, draw the earth up to the ſtems of the plants which were left under the glaſſes, taking great care not to let the earth fall into their hearts; and ſet your glaſſes over them again, raiſing your props an inch or two higher than before, to give them more air, obſerving to take them off whenever there may be ſome gentle ſhowers, which will greatly refreſh the plants.

In a little time after, if you find your plants grow ſo faſt as to fill the glaſſes with their leaves, you ſhould then ſlightly dig about the plants, and raiſe the ground about them in a bed broad enough for the glaſſes to ſtand about four inches high, which will give your plants a great deal of room by raiſing the glaſſes ſo much higher, when they are ſet over them; and by this means they may be kept covered until April, which otherwiſe they could not, without prejudice to the leaves of the plants: and this is a great advantage to them; for many times we have returns of ſevere froſts at the latter end of March, which prove very hurtful to theſe plants, if expoſed thereto, eſpecially after having been nurſed up under glaſſes.

After you have finiſhed your beds, you may ſet your glaſſes over your plants again, obſerving to raiſe your props pretty high, eſpecially if the weather be mild, that they may have free air to ſtrengthen them; and in mild ſoft weather ſet off your glaſſes, as alſo in gentle ſhowers of rain; and now you muſt begin to harden them by degrees to endure the open air: however, it is adviſeable to let your glaſſes remain over them as long as poſſible, if the nights ſhould be froſty, which will greatly forward your plants; but be ſure do not let your glaſſes remain upon them in very hot ſun-ſhine, eſpecially if their leaves preſs againſt the ſides of the glaſſes; for I have often obſerved, in ſuch caſes, that the moiſture which hath riſen from the ground, together with the perſpiration of the plants, which, by the glaſſes remaining over them, hath been detained upon the leaves of the plants, and when the ſun hath ſhone hot upon the ſides of the glaſſes, hath acquired ſuch a powerful heat from the beams thereof, as to ſcald all their larger leaves, to the no ſmall prejudice of the plants: nay, ſometimes I have ſeen large quantities of plants ſo affected therewith, as never to be worth any thing after.

If your plants have ſucceeded well, toward the end of April ſome of them will begin to fruit; you muſt therefore look over them carefully every other day, and when you ſee the flower plainly appear, you muſt break down ſome of the inner leaves over it to guard it from the ſun, which would make the flower yellow and unſightly, if expoſed thereto; and when you find your flower at its full bigneſs (which you may know by its outſide, parting, as if it would run,) you muſt then draw it out of the ground, and not cut them off, leaving the ſtalk in the ground, as is by ſome practiſed; and if they are deſigned for preſent uſe, you may cut them out of their leaves; but if deſigned to keep, you ſhould preſerve their leaves about them, and put them into a cool place: the beſt time for pulling of them is in a morning, before the ſun hath exhaled the moiſture; for Cauliflowers, pulled in the heat of the day, loſe that firmneſs which they naturally have, and become tough.

But to return to our ſecond crop (the plants being raiſed and managed as was directed for the early crop, until the end of October;) you muſt then prepare ſome beds, either to be covered with glaſs-frames, or arched over with hoops, to be covered with mats, &c. Theſe beds ſhould have ſome dung laid at the bottom, about ſix inches or a foot thick, according to the ſize of your plants; for if they are ſmall, the bed ſhould be thicker of dung, to bring them forward, and ſo *vice verſa:* this dung ſhould be beat down cloſe with a fork, in order to prevent the worms from finding their way through it; then lay ſome good freſh earth about four or five inches thick thereon, in which you ſhould plant your plants about two inches and a half ſquare, obſerving to ſhade and water them until they have taken freſh root: but be ſure do not keep your coverings cloſe, for the warmth of the dung will occaſion a large damp in the bed, which, if pent in, will greatly injure the plants.

When your plants have taken root, you muſt give them as much free open air as poſſible, by keeping the glaſſes off in the day-time as much as the weather will permit; and in the night, or at ſuch times as the glaſſes require to be kept on, raiſe them up with bricks or other props to let in freſh air, unleſs in froſty weather; at which time the glaſſes ſhould be covered with mats, ſtraw, and Peaſe-haulm, &c. but this is not to be done except in very hard froſts: you muſt alſo obſerve to guard them againſt great rain, which in winter time is very hurtful to them; but in mild weather, if the glaſſes are kept on, they ſhould be propped to admit freſh air; and if the under leaves grow yellow and decay, be ſure to pick them off; for if the weather ſhould prove very bad in winter, ſo that you ſhould be obliged to keep them cloſe covered for two or three days together, as it ſometimes

happens,

happens, theſe decayed leaves will render the incloſed air very noxious; and the plants perſpiring pretty much at that time, are often deſtroyed in vaſt quantities.

In the beginning of February, if the weather proves mild, you muſt begin to harden your plants by degrees, that they may be prepared for tranſplantation; and the ground where you intend to plant your Cauliflowers out for good (which ſhould be quite open from trees, &c. and rather moiſt than dry,) having been well dunged and dug, ſhould be ſown with Radiſhes a week or fortnight before you intend to plant out your Cauliflowers: the reaſon why I mention the ſowing of Radiſhes particularly, is this, viz. that if there are not ſome Radiſhes amongſt them, and the month of May ſhould prove hot and dry, as it ſometimes happens, the fly will ſeize your Cauliflowers, and eat their leaves full of holes, to their prejudice, and ſometimes their deſtruction; whereas, if there are Radiſhes upon the ſpot, the flies will take to them, and never meddle with the Cauliflowers ſo long as they laſt. Indeed, the gardeners near London mix Spinach with their Radiſh-ſeed, and ſo have a double crop, which is an advantage where ground is dear, or where perſons are ſtraitened for room; otherwiſe it is very well to have only one crop amongſt the Cauliflowers, that the ground may be cleared in time.

Your ground being ready, and the ſeaſon good, about the middle or end of February, you may begin to plant out your Cauliflowers: the diſtance which is generally allowed by the gardeners near London (who plant other crops between their Cauliflowers to ſucceed them, as Cucumbers for pickling, and winter Cabbages) is every other row four feet and a half apart, and the intermediate rows two feet and a half, and two feet two inches diſtance in the rows; ſo that in the latter end of May, or beginning of June (when the Radiſhes and Spinach are cleared off,) they put in ſeeds of Cucumbers for pickling, in the middle of the wide rows, at three feet and a half apart; and in the narrow rows, plant Cabbages for winter uſe, at two feet two inches diſtance, ſo that theſe ſtand each of them exactly in the middle of the ſquare between four Cauliflower-plants; and theſe, after the Cauliflowers are gone off, will have full room to grow, and the crop be hereby continued in a ſucceſſion thro' the whole ſeaſon.

About three weeks or a month after your Cauliflowers are planted out, the Radiſhes between them will be fit to hoe; at which time, when you are hoeing out the Radiſhes where they are too thick, you ſhould cut off all ſuch as grow immediately about the Cauliflowers, and would prove hurtful to them, by drawing them up tall and weak; and alſo at that time draw the earth up to the ſtems of the plants, being careful not to let any get into their hearts (as was before directed;) and when your Radiſhes are fit to pull, be ſure to clear round the Cauliflowers firſt, and keep drawing the earth up to their ſtems as they advance in height, which will keep their ſtems from being hardened by the weather, and be of ſingular ſervice to your plants.

There are many people who are very fond of watering Cauliflower-plants in ſummer, but the gardeners near London have almoſt wholly laid aſide this practice, as finding a deal of trouble and charge to little purpoſe; for if the ground be ſo very dry as not to produce tolerable good Cauliflowers without water, it ſeldom happens, that watering them renders them much better; and when once they have been watered, if it is not conſtantly continued, it had been much better for them if they never had any; as alſo if it be given them in the middle of the day, it rather helps to ſcald them: ſo that, upon the whole, if care be taken to keep the earth drawn up to their ſtems, and clear them from every thing that grows near them, that they may have free open air, you will find that they will ſucceed better without than with water, where any of theſe cautions are not ſtrictly obſerved.

When your Cauliflowers begin to fruit, you muſt often look over them, to turn down their leaves, as was before directed, to preſerve their whiteneſs; and when they are full grown, obſerve the former directions in pulling them, &c. but wherever you meet with an extraordinary good Cauliflower, whoſe curd is hard and white, and perfectly free from any frothineſs about the edges, you ſhould ſuffer it to remain for ſeed, keeping the leaves cloſe down upon it until the flower hath ſhot out ſtems, and then remove the leaves from them by degrees, but do not expoſe them too much to the open air at firſt. As the ſtems advance, you muſt take the leaves quite away; and when they begin to branch out, you ſhould fix three pretty ſtrong ſtakes, at equal angles, about it, ſurrounding them with packthread, &c. to ſupport their branches, which would be otherwiſe liable to break with the wind.

When your pods begin firſt to be formed, if the weather proves dry, you ſhould give them a little water all over (with a watering-pot that hath a roſe to it;) which will promote the progreſs of the ſeeds, and preſerve them from mildew, which is often hurtful to the ſeeds; and, when your ſeeds are ripe, you muſt cut it off, and hang it up to dry, and rub it out as was directed for Cabbage-ſeed: and although your flowers do not produce ſo much ſeed as thoſe which were of a ſofter or frothy nature, yet the goodneſs of ſuch ſeeds will ſufficiently recompenſe for the quantity; and any perſon who was to purchaſe his ſeeds, had better give ten ſhillings an ounce for ſuch ſeed than two for the ſeeds commonly ſaved for ſale, as the gardeners about London have experienced, who will never buy any ſeeds of this kind, if they do not know how they were ſaved.

But in order to have a third crop of Cauliflowers, you ſhould make a ſlender hot-bed in February, in which you ſhould ſow the ſeeds, covering them a quarter of an inch thick with light mould, and covering the bed with glaſs-frames: you ſhould now and then gently refreſh the bed with water, obſerving to raiſe the glaſſes with bricks or props in the daytime, to let in freſh air; and when the plants are come up, and have gotten four or five leaves, you ſhould prepare another hot-bed to prick them into, which may be about two inches ſquare; and in the beginning of April harden them by degrees, to fit them for tranſplanting, which ſhould be done the middle of that month, at the diſtance directed for the ſecond crop, and muſt be managed accordingly: theſe (if the ſoil is moiſt where they are planted, or the ſeaſon cool and moiſt) will produce good Cauliflowers about a month after the ſecond crop is gone, whereby their ſeaſon will be greatly prolonged.

There is alſo a fourth crop of Cauliflowers, which is raiſed by ſowing the ſeed about the 23d of May; and being tranſplanted, as hath been before directed, will produce good Cauliflowers in a kindly ſeaſon and good ſoil, after Michaelmas, and continue thro' October and November; and, if the ſeaſon permit, often a great part of December.

The reaſon why I fix particular days for the ſowing of this ſeed, is becauſe two or three days often make a great difference in their plants; and becauſe theſe are the days uſually fixed by the gardeners near London, who have found their crops to ſucceed beſt when ſown at thoſe times, although one day, more or leſs, will make no great odds. I have alſo, in this edition, altered the days to the new ſtyle.

BREYNIA. See CAPPARIS.

BROMELIA. Plum. Nov. Gen. 46. tab. 8. Lin. Gen. Plant. 356.

The CHARACTERS are,

It hath a three-cornered permanent empalement cut into three parts, upon which the germen is ſituated. The flower hath three long narrow petals, which are erect, each having a nectarium joined to it above the baſe. It hath ſix ſtamina the length of the petals, which are terminated by oblong ſummits. The germen is ſituated below the receptacle, ſupporting a ſlender ſtyle, crowned by a trifid obtuſe ſtigma. The empalement afterward becomes

an oblong capſule, divided by a partition in the middle, to which the ſeeds are fixed quite round; theſe are ſmooth and almoſt cylindrical.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle. Dr. Dillenius has ſuppoſed this to be the ſame with Plumier's Karatas, which miſtake he was led into by Plumier's drawing, where the flower of his Caraguata is joined to the fruit of his Karatas, and *vice verſa*; and from hence Dr. Linnæus has been induced to join theſe and the Ananas together, making them only ſpecies of the ſame genus.

The SPECIES are,

1. BROMELIA (*Nudicaulis*) foliis radicalibus dentato-ſpinoſis caulinis integerrimis. Lin. Sp. Plant. 286. *Bromelia with lower leaves indented and prickly, and thoſe of the ſtalks entire.* Bromelia pyramidata, aculeis nigris. Plum. Nov. Gen. 46.
2. BROMELIA (*Lingulata*) foliis ſerrato-ſpinoſis obtuſis, ſpicis alternis. Lin. Sp. Plant. 285. *Bromelia with ſawed, prickly, obtuſe leaves, and ſpikes of flowers growing alternate.* Bromelia ramoſa & racemoſa foliis Arundinaceis ſerratis. Plum. Nov. Gen. 46.

The firſt ſort hath leaves very like ſome of the ſorts of Aloes, but not ſo thick and ſucculent, which are ſharply indented on their edges, where they are armed with ſtrong black ſpines; from the center of the plant ariſes the flower-ſtalk, which is near three feet high, the lower part of which is garniſhed with entire leaves, placed alternately at every joint. The upper part of the ſtalk is garniſhed with flowers, ſet in a looſe ſpike or thyrſe; theſe have three narrow herbaceous petals ſitting upon the germen, and ſix ſlender ſtamina, with the ſtyle, which are ſhorter than the petals. Theſe flowers in the country where they naturally grow, are ſucceeded by oval ſeed-veſſels, having a longitudinal partition, in the center of which are faſtened cylindrical ſeeds on every ſide, which are ſmooth.

The ſecond ſort hath ſhorter leaves than the firſt, which ſtand erect, and are narrow at the baſe, increaſing in width gradually to the top, where they are broadeſt; theſe are ſharply ſawed on their edges, and are of a deep green colour. The flower-ſtem ariſes from the center of the plant, which divides upward into ſeveral branches; the upper part of theſe are garniſhed with ſpikes of flowers, which come out alternately from the ſides of the branches, each having a narrow entire leaf juſt below it, which is longer than the ſpike. The flowers are placed very cloſe on the ſpikes, each having three ſhort petals ſituated upon the globular empalement; when theſe decay, the empalement turns to an oval pointed ſeed-veſſel, incloſing ſeeds of the ſame ſhape with the former.

Both theſe plants grow naturally in very warm countries. Father Plumier, who gave this title to the genus, found them growing in the French Iſlands in America; and the late Dr. Houſtoun obſerved them growing in Jamaica, and in ſeveral parts of the Spaniſh Weſt-Indies. The firſt ſort alſo grows on the coaſt of Guinea, from whence I received the ſeeds; and the ſecond ſort was ſent me from St. Chriſtopher's.

Theſe plants are propagated by ſeeds, which muſt be procured from the country where they grow naturally, for they do not produce any in England. Theſe muſt be ſown in ſmall pots filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark; the earth in theſe pots ſhould be ſprinkled over with water two or three times a week, according to the heat of the weather, but muſt not have too much moiſture. If the ſeeds are good, the plants will appear in about five or ſix weeks, and in a month after will be fit to tranſplant, when they ſhould be carefully ſhaken out of the pots, and each planted in a ſeparate ſmall pot filled with the ſame earth as before; then they muſt be plunged again into a moderate hot-bed, obſerving frequently to ſprinkle them over with water, but be cautious of giving them too much, leſt the roots ſhould be thereby rotted. During the ſummer ſeaſon the plants ſhould have a moderate ſhare of air, in proportion to the heat of the weather; and, in autumn, they muſt be removed in the bark-ſtove, and treated in the ſame manner as the Ananas, or Pine Apple, with which management they will make good progreſs; but after the firſt winter, they may be placed upon ſtands in the dry ſtove, though they will thrive much better if they are conſtantly kept in the tan-bed, and treated like the Ananas, and will flower in three or four years; whereas thoſe in the dry ſtove will not flower in twice that time.

The other parts of their culture is only to ſhift them into freſh earth when they require it; but they ſhould by no means be put into large pots, for they will not thrive if they are over-potted; nor muſt they have much wet, eſpecially in winter.

Theſe plants make a pretty variety in the hot-houſe, ſo thoſe who have room, may allow a plant or two of each ſort to have a place in their collection of exotic plants.

BROOM, the common. See SPARTIUM.

BROOM, the Spaniſh. See SPARTIUM and GENISTA.

BROWALLIA. Lin. Gen. Plant. 691. Hort. Cliff. 318.

The CHARACTERS are,

The empalement is tubulous, of one leaf, and indented at the top in five unequal parts. The flower is funnel-ſhaped, of one leaf, having a cylindrical tube twice the length of the empalement; the upper part is ſpread open, and divided into five parts, the upper ſegment or lip being a little larger than the others, which are equal. It hath four ſtamina included in the chaps of the petal, the two upper being very ſhort, and the two under broad, longer, and reflexed to the mouth of the tube, which incloſe them; theſe are terminated by ſingle incurved ſummits. In the center is ſituated an oval germen, ſupporting a ſlender ſtyle the length of the tube, crowned by a thick, compreſſed, indented ſtigma. The empalement afterward becomes an oval obtuſe veſſel with one cell, opening at the top in four parts, and filled with ſmall compreſſed ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds included in a capſule.

The SPECIES are,

1. BROWALLIA (*Demiſſa*) pedunculis unifloris. Hort. Cliff. 318. *Browallia with one flower on a foot-ſtalk.* The title of Browallia was given to it by Dr. Linnæus, in honour of profeſſor Browall, of Amſterdam.
2. BROWALLIA (*Elata*) pedunculis unifloris multifloriſque. Lin. Sp. 880. *Browallia with one flower on each foot-ſtalk, and ſometimes many.*

The ſeeds of the firſt ſort were ſent me by Mr. Robert Millar, from Panama, in the year 1735; which ſucceeded in the Chelſea garden, where it has continued to flower, and produce ſeeds every year, but the plants are annual, ſo periſh in autumn: the ſeeds of this plant muſt be ſown upon a hot-bed in the ſpring, and the plants brought forward on another, otherwiſe they will not perfect their ſeeds in England. Some of theſe plants may be tranſplanted in June into the borders of the flower-garden, where, if the ſeaſon proves warm, they will flower and perfect ſeeds; but leſt theſe ſhould fail, there ſhould be two or three plants kept in the ſtove for that purpoſe. The plants uſually grow about two feet high, and ſpread out into lateral branches, garniſhed with oval leaves which are entire, ending in a point, having ſhort foot-ſtalks. Toward the end of the branches the flowers are produced ſingly, upon pretty long foot-ſtalks, ariſing from the wings of the leaf. Theſe have a ſhort empalement of one leaf, which is cut into five parts; out of the center of the empalement the flower ariſes, which is crooked and bent downward; the top of the tube is ſpread open, and the brim, or open part of the flower, has ſome reſemblance to a lipped flower, being irregular. It is of a bright

bright blue colour, ſometimes inclining to a purple or red, and often there are flowers of three colours on the ſame plant. When theſe fall away, the germen in the center becomes an oval capſule of one cell, filled with ſmall, brown, angular ſeeds. It flowers in July, Auguſt, and September, and the ſeeds are ripe in five or ſix weeks after.

When this plant was firſt raiſed in the Chelſea garden, I gave it the title of Dalea, in honour to Mr. Dale, an eminent botaniſt, and a great friend of Mr. Ray's. By this title it was delivered to the Royal Society, and printed in the Philoſophical Tranſactions, and alſo in the catalogue of the Chelſea garden: and by the ſame I communicated the ſeeds to Doctor Linnæus, who afterward changed the name to Browallia, and printed it in the catalogue of Mr. Clifford's garden; where there is a figure of it exhibited, ſo that this latter title is become almoſt univerſal among botaniſts.

The ſecond ſort grows naturally in Peru, from whence the younger Juſſieu ſent the ſeeds; this plant riſes about the ſame height as the firſt, but hath ſtronger ſtalks, and ſends out a greater number of branches, ſo is much more buſhy than that; the flowers are produced upon foot-ſtalks, which proceed from the wings of the leaves; ſome of theſe foot-ſtalks ſuſtain one, others three, or more flowers, of a dark blue colour; theſe are ſucceeded by oval capſules, filled with ſmall angular ſeeds.

This plant is annual, and requires the ſame culture as the firſt ſort, with which it will produce plenty of ſeeds.

BRUNELLA, Self-heal. See PRUNELLA.

BRUNSFELSIA. Plum. Nov. Gen. 12. Lin. Gen. Plant. 230. This plant takes its name from Dr. Brunsfelſius, a famous phyſician.

The CHARACTERS are,

The empalement is permanent, bell-ſhaped, and of one leaf, which is cut into five blunt ſegments at the top. The flower is of one leaf, and funnel-ſhaped, having a long tube, but ſpreads open at the top, where it is divided into five obtuſe ſegments; it hath five ſtamina the length of the tube, which are inſerted in the petal, and are terminated by oblong ſummits. In the center is placed a ſmall round germen, ſupporting a ſlender ſtyle the length of the tube, which is crowned by a thick ſtigma. The empalement afterward becomes a globular berry with one cell, incloſing a great number of ſmall ſeeds, which adhere to the ſkin of the fruit.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and but one ſtyle.

We know but one SPECIES of this genus, viz.

BRUNSFELSIA. (*Americana.*) Lin. Sp. Plant. 191. *American Brunsfelſia.* Brunsfelſia flore albo, fructu croceo molli. Plum. Nov. Gen. 12.

This plant riſes with a woody ſtem to the height of eight or ten feet, ſending out many ſide branches, which are covered with a rough bark, garniſhed with oblong leaves which are entire, and on the lower part of the branches come out ſingle; but toward their extremity, they are placed on every ſide, and are unequal in ſize. At the extremity of the branches, the flowers are produced, generally three or four together. Theſe are almoſt as large as thoſe of the greater Bindweed, but have very long, narrow, hairy tubes; the brim is expanded in the form of the Convolvulus, but is deeply divided into five obtuſe ſegments, which are indented on their border. After the flower is paſt, the empalement turns to a round ſoft fruit, incloſing many oval ſeeds, which are ſituated cloſe to the cover or ſkin, to which they adhere.

This plant grows naturally in moſt of the ſugar iſlands in America, in which places they call it Trumpet Flower; but in the Engliſh gardens, it is at preſent very rare. It may be propagated from ſeeds, which ſhould be ſown early in the ſpring in pots filled with light earth, and plunged into a hot-bed of tanners bark, obſerving to water the earth as often as you find it neceſſary. When the plants are come up, they ſhould be tranſplanted each into a ſeparate ſmall pot filled with freſh light earth, and plunged into the hot-bed again, obſerving to water and ſhade the plants until they have taken root; after which they muſt have air admitted to them every day, in proportion to the warmth of the ſeaſon. When the plants have advanced ſo high as not to be contained in the frames, they ſhould be removed into the bark-ſtove, where, during the ſummer months, they ſhould have a large ſhare of free air, but in winter they muſt be kept very cloſe. With this management the plants will be very ſtrong, and produce their flowers every ſeaſon. Theſe plants may alſo be increaſed by planting cuttings in the ſpring, before they begin to make new ſhoots, in pots filled with freſh light earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; after which, they muſt be managed as hath been directed for other tender exotic plants from the ſame countries.

BRUSCUS. See RUSCUS.

BRYONIA [this plant is ſo called from Βρύον, moſs, or hair, becauſe it bears a flower which is ſoft and hairy,] Briony.

The CHARACTERS are,

It hath male and female flowers on the ſame plant. The male flowers have an empalement of one leaf, which is bell-ſhaped, and indented in five parts at the top. The flower is bell-ſhaped, adhering to the empalement, and cut into five ſegments. It hath three ſhort ſtamina and five ſummits, two of the ſtamina having double ſummits, and the other one. The female flowers ſit upon the germen, and have a deciduous empalement, but the petal is the ſame with thoſe of the male. The germen which is under the flower, ſupports a trifid ſpreading ſtyle, crowned by a ſpreading indented ſtigma. The germen afterward becomes a ſmooth globular berry, containing oval ſeeds adhering to the ſkin.

This genus of plants is ranged in the tenth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Syngeneſia, from its having male and female flowers on the ſame plant, and the ſtamina joined with the ſtyle.

The SPECIES are,

1. BRYONIA (*Alba*) foliis palmatis utrinque calloſo-ſcabris. Hort. Cliff. 453. *Bryony with palmated leaves, which are rough and callous on both ſides.* Bryonia aſpera, ſive alba baccis rubris. C. B. P. 297. *White Briony with red berries.*
2. BRYONIA (*Africana*) foliis palmatis quinquepartitis utrinque lævibus, laciniis pinnatifidis. Lin. Sp. 1438. *Briony with palmated leaves cut into five ſegments, which are ſmooth on each ſide.* Bryonia Africana laciniata, tuberoſa radice, floribus herbaceis. Par. Bat. 107.
3. BRYONIA (*Cretica*) foliis palmatis ſupra calloſo-punctatis. Hort. Cliff. 453. *Cretan Briony with palmated leaves, whoſe upper ſurface is ſtudded with callous ſpots.* Bryonica Cretica maculata. C. B. P. 297.
4. BRYONIA (*Racemoſa*) foliis trilobis ſuprà calloſo-punctatis, fructu racemoſo ovali. *Briony with trilobate leaves, whoſe upper ſides are marked with callous ſpots, and oval fruit growing in bunches.* Bryonia olivæ fructu rubro. Plum. Cat. 3.
5. BRYONIA (*Variegata*) foliis palmatis, laciniis lanceolatis, ſuprà punctatis infernè lævibus, fructu ovato ſparſo. *Briony with palmated leaves, whoſe ſegments are ſpear-ſhaped, and their upper ſide ſpotted, but their under ſmooth, and an oval ſcattered fruit.* Bryonia Americana fructu variegato. Dillen.
6. BRYONIA (*Bonarienſis*) foliis palmatis quinquepartitis hirſutis, laciniis obtuſis. *Briony with hairy palmated leaves divided into five parts, and obtuſe ſegments.* Bryonia Bonarienſis fici folio. Hort. Elth. 58.

The firſt ſort grows upon dry banks, under hedges, in many parts of England; but may be cultivated in a garden for uſe, by ſowing the berries, in the ſpring of the year, in a dry poor ſoil; where they will in two years time, grow to be large roots, provided they are not too cloſe. The roots of this plant have been

been formerly, by impoſtors, brought into an human ſhape, and carried about the country, and ſhewn for Mandrakes to the common people, who were eaſily impoſed on by their credulity, and theſe got good livings thereby. The method which theſe people practiſed, was to find a young thriving Briony plant, then they opened the earth all round the plant, being careful not to diſturb the lower fibres; and (being prepared with ſuch a mould, as is uſed by the people who make plaſter figures) they fixed the mould cloſe to the root, faſtening it with wire, to keep it in its proper ſituation; then they filled the earth about the root, leaving it to grow to the ſhape of the mould, which is effected in one ſummer; ſo that if this be done in March, by September it will have the ſhape. The leaves of this plant are alſo often impoſed on the people in the market for Mandrake leaves, although there is no reſemblance between them, nor any agreement in quality.

The ſecond and fourth ſorts are perennial plants, their roots remaining ſeveral years, but their branches decay every winter. Theſe roots muſt be planted in pots filled with freſh light earth, and in winter muſt be placed in the green-houſe, to protect them from froſt and great rains; which would deſtroy them, if they were expoſed thereto. During the winter ſeaſon, they ſhould have very little water given them; but in ſummer, when they are expoſed to the open air, they muſt be frequently refreſhed with water in dry weather. They flower in July, and in warm ſummers will perfect their ſeeds.

The third, fifth, and ſixth ſorts, are annual plants; theſe muſt be raiſed on a hot-bed early in the ſpring, and when the plants are about three inches high, they ſhould be each tranſplanted into a ſmall pot filled with freſh light earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root. When the plants are grown ſo large, as to ramble about on the ſurface of the bed, and begin to entangle with other plants, they ſhould be ſhifted into larger pots, and placed in the bark-ſtove, where their branches may be trained to the wall, or againſt an eſpalier, that they may have ſun and air, which is abſolutely neceſſary for their producing fruit. When theſe plants are full of fruit, they make a pretty variety in the ſtove amongſt other exotic plants.

The ſecond and fourth ſorts are alſo propagated from ſeeds, which ſhould be ſown on a hot-bed; and when the plants are fit to tranſplant, they ſhould be put into pots; and after they have taken root, ſhould be inured to bear the open air by degrees; where they may remain during the ſummer ſeaſon, but in winter they muſt be ſheltered under a hot-bed frame. The fourth ſort is much tenderer than the former.

BRYONIA NIGRA. See TAMNUS.

BUBON. Lin. Gen. Plant. 312. Apium. C. B. 154. Ferula. Herm. Par. 163. Macedonian Parſley.

The CHARACTERS are,

It hath an umbelliferous flower; the greater, or general umbel, is compoſed of about ten ſmaller, thoſe which are ſituated in the middle being the ſhorteſt; the ſmall umbels have near twenty rays. The general involucrum hath five pointed ſpear-ſhaped leaves, which ſpread open and are permanent; thoſe of the ſmaller umbels, conſiſt of many little leaves of the ſame length with the umbel: the empalement of the flower is permanent, ſmall, and indented in five parts; the flower is compoſed of five ſpear-ſhaped petals, which turn inward; it hath five ſtamina the length of the petals, terminated by ſingle ſummits. The oval germen is ſituated below the flower, ſupporting two briſtly ſtyles which are permanent, and the length of the ſtamina, crowned by obtuſe ſtigma. The germen afterward becomes an oval, channelled, hairy fruit, dividing in two parts, each having an oval ſeed, plain on one ſide, but convex on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. BUBON (*Macedonicum*) foliolis rhombeo-ovatis crenatis, umbellis numeroſiſſimis. Hort. Cliff. 95. *Bubon with oval, rhomboid, crenated leaves, and many umbels.* Apium Macedonicum. C. B. P. 154. *Macedonian Parſley.*
2. BUBON (*Rigidius*) foliolis linearibus. Hort. Cliff. 95. *Bubon with very narrow leaves.* Ferula durior ſive rigidis & breviſſimis foliis. Boccon. Muſ. 2. 84.
3. BUBON (*Galbanum*) foliolis rhombeis dentatis glabris ſtriatis umbellis paucis. Hort. Cliff. 96. *Bubon with ſmooth rhomboid leaves and few umbels.* Ferula Africana galbanifera folio & facie liguſtici. Par. Bat. 163.
4. BUBON (*Gumiferum*) foliolis glabris inferioribus rhombeis ſerratis, ſuperioribus pinnatifidis tridentatis. Prod. Leyd. 100. *Bubon with ſmooth rhomboid under leaves which are ſawed, and upper leaves winged and indented in three parts.* Ferula Africana galbanifera folio myrrhidis. Hort. Amſt. p. 115.

The firſt ſends out many leaves from the root, the lower growing almoſt horizontally, ſpreading near the ſurface of the ground: the foot-ſtalk of each leaf divides into ſeveral other ſmaller, garniſhed with ſmooth rhomb-ſhaped leaves, which are of a bright, pale, green colour, indented on their edges. In the center of the plant ariſes the flower-ſtem, which is little more than a foot high, dividing into many branches, each being terminated by an umbel of white flowers, which are ſucceeded by oblong hairy ſeeds. It flowers in July, and the ſeeds ripen in autumn, ſoon after which the plant decays.

This plant in warm countries is biennial; the plants which riſe from ſeeds one year, produce flowers and ſeeds the next, and then periſh: but in England, they ſeldon flower till the third or fourth year from ſeed; but whenever the plant flowers, it always dies.

It is propagated by ſeeds, which ſhould be ſown on a bed of light ſandy earth, either early in the autumn, or in April; and if the ſeaſon prove warm and dry, the ground ſhould be ſhaded in the heat of the day, and frequently refreſhed with water, which is a ſure method to bring up the plants; for where this is not practiſed, the ſeeds often fail, or remain long in the ground. When the plants come up, they will require no other care but to be kept clean from weeds, till the beginning of October, when they ſhould be carefully taken up, and planted in a warm border of dry ground; and a few of them ſhould be put into pots, that they may be ſheltered under a frame in winter; for in ſevere froſt, thoſe which are expoſed to the open air, are frequently killed; though, in moderate winters, they will live abroad without covering; but it is a ſecure way to preſerve the ſpecies, to keep two or three plants in pots, in ſhelter, during the winter, leſt thoſe abroad ſhould be deſtroyed. The ſeeds of this plant is one of the ingredients in Venice treacle.

The ſecond ſort grows naturally in Sicily, from whence I received the ſeeds. This is a low perennial plant, having ſhort ſtiff leaves, which are very narrow: the flower-ſtalk riſes near a foot high, which is terminated by an umbel of ſmall white flowers, which are ſucceeded by ſmall, oblong, channelled ſeeds. It flowers in June, and the ſeeds ripen in September. It is propagated by ſeeds, and ſhould have a dry ſoil and a warm ſituation, where the plants will continue ſeveral years. It is a plant of little beauty or uſe, ſo is only preſerved for the ſake of variety.

The third ſort riſes with an upright ſtalk to the height of eight or ten feet, which at bottom is ligneous, having a purpliſh bark, covered with a whitiſh powder, which comes off when handled; the upper part of the ſtalk is garniſhed with leaves at every joint, the foot-ſtalks half embracing them at their baſe; branching out into ſeveral ſmaller, like thoſe of the common Parſley, and are ſet with leaves like thoſe of Lovage, but ſmaller, of a grey colour; the top of the ſtalk is terminated by an umbel of yellow flowers,

flowers, which are ſucceeded by oblong channelled ſeeds, having a thin membrane or wing on their border. It flowers in Auguſt, but hath not produced ſeeds in England. When any part of the plant is broken, there iſſues out a little thin milk of a cream colour, which hath a ſtrong ſcent of Galbanum.

The fourth ſort riſes with a ligneous ſtalk about two feet high, garniſhed with leaves at each joint, which branch out like the former; but the ſmall leaves or lobes are narrow and indented, like thoſe of Baſtard Hemlock. The ſtalk is terminated by a large umbel of ſmall white flowers, which are ſucceeded by ſeeds like thoſe of the former ſort.

Theſe plants are both natives of Africa. They are propagated by ſeeds, which ſhould be ſown in pots filled with light loamy earth, as ſoon as they arrive; which, if it happens toward autumn, ſhould be plunged into a bed of tanners bark, where the heat is gone, and ſcreened from froſt in winter. In the ſpring the plants will come up, and by the middle of April will be fit to remove, when they ſhould be carefully ſhaken out of the pots, being careful not to tear off their roots, and plant them each into a ſeparate ſmall pot, filled with the ſame earth as before; then plunge the pots into the tan again, and water them to ſettle the earth to the roots of the plants, and ſhade them from the ſun in the day time, until they have taken new root; after this they muſt be inured gradually to bear the open air; into which they ſhould be removed in June, and placed with other exotic plants in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into the green-houſe, and placed where they may enjoy as much of the ſun and air as poſſible, but defended from froſt.

In winter theſe plants ſhould have but little water given them, for much wet is very injurious to them: in ſummer, when they are expoſed to the open air, they muſt be frequently refreſhed with water in dry weather; but at no time ſhould have too much wet, for that will rot their roots.

Theſe plants make a pretty variety in the green-houſe in winter, and when they are placed abroad in the ſummer with other green-houſe plants, they have a good effect, eſpecially when they are grown to a large ſize. They generally flower the third year from ſeeds, but their flowers are produced ſo late in ſummer, that the ſeeds have ſeldomtime to form before the cold comes on in the autumn; at leaſt for ſome years paſt, as the ſeaſons have been cold and moiſt; but in warm ſummers, the fourth ſort will perfect ſeeds, if they ſtand in a warm ſheltered ſituation.

The Galbanum of the ſhops is ſuppoſed to be procured from the third ſort, for upon breaking the leaves, the juice which flows out from the wound, hath a ſtrong odour of the Galbanum, which is a confirmation of it.

BUCKSHORN, or HARTSHORN. See PLANTAGO.

BUDDING. See INOCULATING.

BUDDLEJA. Houſt. MSS. Lin. Gen. Plant. 131.

The CHARACTERS are,

It hath a ſmall permanent empalement, which is ſlightly cut at the top into five acute parts. The flower is of one leaf, bell-ſhaped, and quadrifid, the petal being ſtretched out beyond the empalement; it hath four ſhort ſtamina, which are placed at the diviſions of the petal, terminated by ſhort ſummits. The oblong germen is ſituated in the center, ſupporting a ſhort ſtyle, crowned by an obtuſe ſtigma; the germen afterward becomes an oblong capſule, having two cells filled with ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and but one ſtyle.

The SPECIES are,

1. BUDDLEJA (*Americana*) foliis ovatis ſerratis oppoſitis floribus ſpicatis racemoſis, caule fruticoſo. *Buddleja with oval ſawed leaves, growing oppoſite, flowers growing in branching ſpikes, and a ſhrubby ſtalk.* Buddleja fruteſcens foliis conjugatis & ſerratis floribus ſpicatis luteis. Houſt. MSS.

2. BUDDLEJA (*Occidentalis*) foliis lanceolatis acuminatis integerrimis oppoſitis, ſpicis interruptis. *Buddleja with pointed ſpear-ſhaped leaves which are entire, placed oppoſite, and broken ſpikes of flowers.* Buddleja fruteſcens foliis oblongis mucronatis, floribus ſpicatis albis. Houſt. MSS.

The firſt ſort grows naturally in Jamaica, and moſt of the other iſlands in America, where it riſes to the height of ten or twelve feet, with a thick woody ſtem, covered with a grey bark; this ſends out many branches toward the top, which come out oppoſite; as are alſo the leaves ſo placed, which are oval, and covered with a brown hairy down. At the end of the branches the flowers are produced in long cloſe ſpikes, branching out in cluſters, which are yellow, conſiſting of one leaf, cut into four ſegments; theſe are ſucceeded by oblong capſules, filled with ſmall ſeeds. This was ſent me by Dr. Houſtoun, from Jamaica, in 1730, under the title Verbaſci folio minor arbor, floribus ſpicatis luteis tetrapetalis ſeminibus ſingulis oblongis in ſingulis vaſculis ſiccis. Sloan. Cat. Jam. 139. But as this was a vague title, the doctor afterward conſtituted a new genus, and gave it the title of Buddleja, in memory of Mr. Buddle, an eminent Engliſh botaniſt.

The ſecond ſort the ſame gentleman ſent me from Carthagena, where it grows naturally. This is the Ophioxylon Americanum, foliis oblongis mucronatis, levitèr ſerratis bardanæ inſtar, ſubtus lanuginoſis. Pluk. Alm. 270. tab. 210. fig. s. and was by Plukenet ſuppoſed to be the ſame with the former, which was denied by Sir Hans Sloane in his Hiſtory of Jamaica.

This ſort riſes much taller than the firſt, and divides into a great number of ſlender branches, which are covered with a ruſſet hairy bark, garniſhed with long ſpear-ſhaped leaves, ending in ſharp points: theſe grow oppoſite at every joint; at the end of the branches are produced branching ſpikes of white flowers, growing in whorls round the ſtalks, with ſmall ſpaces between each. It hath long, narrow, ſpear-ſhaped leaves growing between the ſpikes, whereas thoſe of the other ſort are naked. The leaves of this are much thinner than thoſe of the firſt ſort, and have ſcarce any down on their under ſide; the ſpikes of flowers grow more erect, ſo form a large looſe ſpike at the end of every branch.

The plants grow naturally in gullies or other low ſheltered ſpots, in the Weſt-Indies, their branches being too tender to reſiſt the force of ſtrong winds, ſo are rarely ſeen in open ſituations.

They are propagated by ſeeds, which ſhould be obtained from the countries where they naturally grow, for they do not perfect them in England. Theſe ſhould be brought over in their capſules or pods, for thoſe which are taken out before they are ſent ſeldom grow. They ſhould be ſown in ſmall pots, filled with rich light earth, and very lightly covered with the ſame; for as theſe ſeeds are very ſmall, ſo if they are buried deep in the ground, they periſh. The pots ſhould be plunged into a moderate hot-bed, and muſt be every third or fourth day gently watered, being very careful not to waſh the ſeeds out of the ground, by too haſty watering them. If the ſeeds are freſh and good, the plants will come up in about ſix weeks, provided they are ſown in the ſpring; and if they grow kindly, will be large enough to tranſplant in about two months after. Then they ſhould be carefully ſeparated, and each planted into a ſmall pot, filled with light rich earth, and plunged into the hot-bed again, obſerving to ſhade them from the ſun until they have taken new root, as alſo to refreſh them with water when they require it. After the plants have taken freſh root in the pots, there ſhould be freſh air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently, but moderately, refreſhed with water. If the plants thrive well, they will have filled theſe

ſmall pots with their roots by the middle of Auguſt, at which time it will be proper to ſhift them into pots one ſize larger, that they may have time to take good root again, before the cold weather comes on. When theſe are new potted, the tan ſhould be turned over to renew the heat; and if it is wanted, ſome freſh tan muſt be added to the bed, to encourage the roots of the plants. In this bed they may remain till autumn, when they muſt be removed into the ſtove, and plunged into the tan-bed; where they muſt conſtantly remain, for they are too tender to thrive in this country, if they are not ſo treated. During the winter they muſt have but little water, and ſhould be kept warm; but in ſummer they ſhould have freſh air admitted to them conſtantly when the weather is warm, and frequently ſprinkled all over with water. With this management, the plants will flower the fourth year from ſeeds, and continue ſo to do every year after, and will make a good appearance in the ſtove.

BUGLOSSUM. See ANCHUSA, and LYCOPSIS.

BUGULA. Tourn. Inſt. R. H. 208. tab. 98. Ajuga. Lin. Gen. Plant. 624. Bugle.

The CHARACTERS are,

It hath a ſhort permanent empalement of one leaf, which is ſlightly cut into five parts; the flower is of one leaf, of the lip kind, having an incurved cylindrical tube; the upper lip is very ſmall, erect, and bifid; the under lip or beard is large, open, and divided into three obtuſe ſegments, the middle being large, and the two ſides ſmall; it hath four erect ſtamina, two of which are longer than the upper lip, and two ſhorter, terminated by double ſummits. In the center is ſituated the four germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by two ſlender ſtigma. The germen afterward become four naked ſeeds incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fourteenth claſs, intitled Didynamia Gymnoſpermia, the flower having two long, and two ſhort ſtamina, and is ſucceeded by naked ſeeds.

The SPECIES are,

1. BUGULA (*Reptans*) foliis caulinis ſemiamplexicaulibus, ſtolonibus reptatricibus. *Bugle whoſe leaves half embrace the ſtalks, and ſhoots which put out roots.* Bugula. Dod. Pempt. 135. *Common Bugle.*
2. BUGULA (*Decumbens*) foliis oblongo-ovatis, caulibus decumbentibus, verticillis diſtantibus. *Bugle with oblong oval leaves, declining ſtalks, and the whorls of flowers wide aſunder.* Bugula folio maximo flore pallide cæruleo. Boerh. Ind. alt. 1. 184.
3. BUGULA (*Pyramidalis*) foliis obtuſe-dentatis, caule ſimplici. *Bugle with blunt indented leaves, and a ſingle ſtalk.* Ajuga tetragono pyramidalis. Lin. Sp. Plant. 561.
4. BUGULA (*Genevenſis*) foliis oblongis tomentoſis, calycibus hirſutis. *Bugle with oblong woolly leaves, and hairy flower-cups.* Bugula carneo flore. Cluſ. Hiſt. 2. p. 43.
5. BUGULA (*Orientalis*) villoſa, foliis ovato-dentatis ſeſſilibus, floribus reſupinatis. *Hairy Bugle with oval indented leaves, placed cloſe to the ſtalks, and inverted flowers.* Bugula orientalis villoſa flore inverſo candido cum oris purpureis. Tourn. Cor. 14.

The firſt ſort grows naturally in woods, and ſhady moiſt places, in moſt parts of England, where it ſpreads and increaſes greatly by the ſide ſhoots, which put out roots at their joints. There are two varieties of this, one with a white, and the other a pale purple flower, which I obſerved growing in ſeveral parts of Weſtmoreland; but theſe do not differ in any other reſpect than in the colour of their flowers from the common, therefore I have only mentioned them as varieties.

The common Bugle is greatly eſteemed as a vulnerary herb, and is uſed both internally and externally; it enters as an ingredient into the vulnerary decoctions of the ſurgeons, and is commended externally, applied to ulcers. This is conſtantly mixed with the vulnerary herbs, imported from Switzerland. It is titled Conſolida Media, or *Middle Conſound.* As this grows naturally wild in great plenty, ſo it is ſeldom admitted into gardens.

The ſecond ſort grows naturally on the Alps; the leaves of this are much longer than thoſe of the common Bugle, the ſtalks are weaker, and decline on every ſide, and the whorls of flowers are much ſmaller, and are ranged at a greater diſtance. This is admitted into ſome gardens for the ſake of variety, and propagates in plenty by its trailing ſtalks. This requires a moiſt ſhady ſituation.

The third ſort grows naturally in France, Germany, and other countries, but is not a native in England. This grows about four or five inches high, with a ſingle ſtalk, which is garniſhed with leaves at each joint, placed oppoſite; theſe are oval, and indented bluntly on their edges. The flowers grow in whorls round the ſtalks, and toward the top form a cloſe thick ſpike, and are of a fine blue colour.

The fourth ſort grows naturally in many parts of Europe. This approaches near to the common Bugle, but the leaves of this are woolly, and the flower-cups are very hairy, in which the chief difference conſiſts. There are two varieties of this, one with a white, and the other a red flower.

The fifth ſort was brought from the Levant by Dr. Tournefort, and is preſerved by thoſe who are curious in collecting rare plants. There are two or three varieties of it, which only differ in the colour of their flowers.

This ſort requires a little protection in winter, therefore the plants ſhould be planted in pots filled with a loamy ſoil, and placed in a ſhady ſituation in ſummer; but in the winter they muſt be removed under a common frame, where they may enjoy as much free air as poſſible in mild weather; but in hard froſt ſhould be covered, otherwiſe they will not live thro' the winter in this country, unleſs it proves very favourable.

This may be propagated by ſeeds, which ſhould be ſown ſoon after it is ripe, in a pot filled with loamy earth, and placed in a ſhady ſituation till autumn, when it ſhould be removed under a frame, where it may be ſcreened from hard froſt. In the ſpring the plants will come up, which ſhould be tranſplanted into ſeparate pots as ſoon as they are ſtrong enough to remove, and, in ſummer, placed in the ſhade, and treated as the old plants. It flowers in May, and the ſeeds ripen the latter end of July. It may alſo be increaſed by offsets, but this is a ſlow method, becauſe the plants put out but few of them, eſpecially while they are young, ſo the other method is chiefly practiſed.

All the other ſorts are hardy enough, and are eaſily multiplied by their ſide ſhoots; theſe delight in a moiſt ſhady ſituation, where they are apt to ſpread too much, eſpecially the two firſt ſorts.

BULB [*Bulbus*, *Lat.* of Βολβὸς, *Gr.*] Bulbous roots are of two ſorts, viz. tunicated (or coated) and ſquamous (or ſcaly.) A tunicated root conſiſts of many coats, involving each other; as in the Onion, Tulip, &c. whoſe roots, if cut through the middle, plainly ſhew the ſeveral coats. A ſquamous root conſiſts of many ſcales, lying over each other like tiles upon a houſe, or ſcales on fiſh; of this kind are the Lily, Martagon, &c.

BULBINE. See ANTHERICUM.

BULBOCASTANUM. See BUNIUM.

BULBOCODIUM. Tourn. Cor. 50. Lin. Gen. Plant. 368.

The CHARACTERS are,

The flower hath no empalement, it is funnel-ſhaped, and compoſed of ſix petals, which are concave, having long, narrow necks, connected at the mouth, but are ſpear-ſhaped above. It hath ſix awl-ſhaped ſtamina ſhorter than the petals, and are inſerted in their middle, having incumbent ſummits. It hath an oval, blunt, three-cornered germen, ſupporting a ſlender ſtyle, crowned by three oblong erect ſtigma. The germen afterward becomes a triangular pointed capſule, having three cells, which are filled with angular ſeeds.

This

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. BULBOCODIUM (*Alpinum*) foliis ſubulato-linearibus. Prod. Leyd. 41. *Bulbocodium with narrow awl-ſhaped leaves.* Bulbocodium Alpinum juncifolium flore unico intus albo extus ſquallide rubente. Raii Syn. Ed. 3. p. 374.
2. BULBOCODIUM (*Vernum*) foliis lanceolatis. Prod. Leyd. 41. *Bulbocodium with ſpear-ſhaped leaves.* Colchicum vernum Hiſpanicum. C. B. P. 69.

The firſt ſort grows naturally upon the Alps, and alſo upon Snowdon hills, in Wales. This hath a ſmall bulbous root, which is covered with a rough hairy ſkin; from which ariſes a few long narrow leaves, ſomewhat like thoſe of the Saffron, but narrower; in the middle of theſe the flower comes out, which ſtands on the top of the foot-ſtalk, growing erect, and is ſhaped like thoſe of the Crocus, but ſmaller; the foot-ſtalk riſes about three inches high, and hath four or five ſhort narrow leaves placed alternately upon it below the flower. This flowers in March, and the ſeeds are ripe in May, when it grows in a garden, but where it grows naturally it is much later.

The ſecond ſort grows naturally in Spain, but hath been long cultivated in gardens. It hath a bulbous root, ſhaped like thoſe of the Snowdrop, covered with a brown ſkin, ſending out three or four ſpear-ſhaped concave leaves, between which comes out the flower, ſtanding on a very ſhort foot-ſtalk, compoſed of ſix petals, three ſtanding on the outſide, and three within between the other; theſe, when they firſt appear, are of a pale colour, but afterward change to a bright purple; when theſe decay, they are ſucceeded by triangular ſeed-veſſels, which are full of ſmall roundiſh ſeeds. It produces the flowers about the ſame time with the firſt.

Theſe plants are propagated by offsets, in the ſame manner as other bulbous rooted flowers. The time to remove them, is ſoon after their leaves decay, but the roots may be kept out of the ground two months without prejudice at that ſeaſon. They ſhould not be removed oftener than every third year, for their roots do not multiply very faſt, ſo by ſuffering them to remain, they will flower much ſtronger, and make a greater increaſe than if they are often taken up.

The firſt ſort requires an eaſtern aſpect, for if it hath too much ſun, it will not thrive; but the ſecond ſhould have a warmer ſituation, ſo may be planted in a ſouth border, and ſhould have a freſh loamy ſoil, but not dunged. They may alſo be propagated by ſeeds, which ſhould be ſown in pots filled with freſh loamy earth in September, and the latter end of October, the pots ſhould be placed under a frame, to protect them from ſevere froſt; in the ſpring the plants will appear, when they may be removed out of the frame, and placed where they may have the morning ſun, but ſcreened from the ſouth. In very dry weather, they ſhould be refreſhed now and then with a little water, while their leaves continue green; but, when theſe decay, the pots ſhould be removed to a ſhady ſituation, where they may remain till autumn, obſerving to keep them clean from weeds. In October there ſhould be a little freſh earth laid on the ſurface of the other, and the pots placed in ſhelter again till the following ſpring, when they muſt be treated in the ſame manner as the former year, till their leaves decay; then the roots ſhould be carefully taken up, and tranſplanted into the borders of the flower-garden, treating them as the old roots; the ſpring following they will produce their flowers.

BUNIAS. Lin. Gen. Plant. 737.

The CHARACTERS are,

The empalement is compoſed of four oblong ſpreading leaves, which fall away. The flower hath four petals, placed in form of a croſs, which are oval, and double the length of the empalement, joined at their baſe, and erect. It hath ſix ſtamina the length of the cup, two of which are oppoſite, and ſhorter than the other four, terminated by erect ſummits, which are bifid at their baſe. In the center is ſituated an oblong germen, having no ſtyle, but crowned by an obtuſe ſtigma. The germen afterward becomes an irregular, ſhort, oval pod, with four angles, one or other of which is prominent and pointed, incloſing one or two roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliquoſa, the flowers having four long and two ſhort ſtamina, and are ſucceeded by pods.

The SPECIES are,

1. BUNIAS (*Orientalis*) ſiliculis ovatis gibbis verrucoſis. Lin. Sp. Plant. 670. *Bunias with oval convex pods, having protuberances.* Crambe Orientalis dentis leonis folio erucaginis facie. Tourn. Cor. 14.
2. BUNIAS (*Erucago*) ſiliculis tetragonis angulis bicriſtatis. Lin. Sp. Plant. *Bunias with ſhort four-cornered pods, whoſe angles are doubly creſted.* Erucago Monſpeliaca ſiliqua quadrangula echinata. C. B. P. 99.
3. BUNIAS (*Cakile*) ſiliculis ovatis lævibus ancipitibus. Lin. Sp. Plant. 670. *Bunias with ſmooth oval pods, ſtanding on each ſide the ſtalk.* Eruca maritima Italica, ſiliqua haſtæ cuſpidi ſimili. C. B. P. 99.

The firſt ſort grows naturally in the Levant, from whence Dr. Tournefort ſent the ſeeds to the Royal Garden at Paris. This hath a perennial root, and an annual ſtalk. It ſends out many oblong leaves, which ſpread on every ſide near the ground, and are deeply jagged on their edges, like thoſe of the Dandelion; from between theſe ariſe the ſtalks, which grow upwards of two feet high, ſending out branches garniſhed at each joint by one oblong ſharp-pointed leaf, eared at the baſe, where they ſit cloſe to the ſtalk. The branches are terminated by long looſe ſpikes of yellow flowers, compoſed of four leaves, ſhaped like thoſe of the Cabbage; theſe are ſucceeded by ſhort, oval, rough pods, ending in a point, incloſing one round ſeed. It flowers in June, and the ſeeds are ripe in September.

The ſecond ſort grows naturally in the ſouth of France and Italy; this is an annual plant, ſending out many branches, which ſpread, and incline toward the ground; garniſhed with glaucous leaves, which are deeply divided into many ſegments, almoſt like thoſe of Swines Creſs. The flowers are produced ſingly from the wings of the leaves, toward the extremity of the branches; theſe are very ſmall, of a pale yellowiſh colour, compoſed of four petals, placed in form of a croſs, which are ſucceeded by ſhort pods, which are creſted on each ſide, containing one or two roundiſh ſeeds.

The third ſort grows naturally about Montpelier; this is alſo an annual plant, ſending out many oblong leaves near the root, which are hairy, deeply cut on each ſide, and ſpread on the ground; between theſe ariſe two or three ſtalks, which grow a foot and a half high, ſending out ſeveral ſide branches, garniſhed with oblong rough leaves, indented on their edges; the upper part of the branches are deſtitute of leaves, but have flowers placed alternately on each ſide, ſtanding on ſhort foot-ſtalks, which are purple, and compoſed of four petals; theſe are ſucceeded by oval-pointed pods, containing one or two roundiſh ſeeds; there is a variety of this with narrow leaves.

Theſe plants are all propagated by ſeed: the firſt ſort may be ſown where the plants are deſigned to remain, in the beginning of April, and when the plants come up, they ſhould be thinned, leaving them two feet aſunder, after which they will require no other care but to keep them clean from weeds. The ſecond year they will produce flowers and ſeeds, and the roots will abide many years after.

The other two ſorts muſt be ſown where they are to remain, but the beſt time is in autumn, becauſe thoſe which are ſown in the ſpring often fail, or do not come up time enough to perfect their ſeeds. Theſe require no other culture but to keep them clean from weeds, and thin the plants to one foot diſtance.

BUNIUM. Lin. Gen. Plant. 298. Bulbocaſtanum. Tourn. Inſt. 312. tab. 161. Pig Nut, or Earth Nut.

The

The CHARACTERS are,

The great or general umbel is compoſed of near twenty rays or ſmall umbels, which are ſhort, and cloſe together. The involucrum of the great umbel is compoſed of many ſhort narrow leaves, thoſe of the ſmaller are the ſame, but are as long as the umbels. The proper empalement of the flower is ſcarce diſcernible. The rays of the great umbel are uniform. The flowers have five heart-ſhaped petals which are equal, and turn inward; they have five ſtamina which are ſhorter than the petals, terminated by ſingle ſummits; the oblong germen is ſituated below the receptacle, ſupporting two reflexed ſtyles, crowned by a blunt ſtigma. The germen afterward becomes an oval fruit, dividing in two parts, containing two oval ſeeds, plain on one ſide, and convex on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs of plants, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. BUNIUM (*Bulbocaſtanum*) bulbo globoſo. Sauv. Monſp. 256. *Earth Nut with a globular root.* Bulbocaſtanum majus folio Apii. C. B. P. 162.
2. BUNIUM (*Creticum*) radice turbinato. *Earth Nut with a turbinated root.* Bulbocaſtanum Creticum radice napi-formi. Tourn. Cor.
3. BUNIUM (*Saxatile*) foliis tripartitis filiformibus linearibus. *Earth Nut with very narrow tripartite leaves.* Bulbocaſtanum minus ſaxatile Peucedani folio. Tourn. Inſt. 312.

The firſt ſort grows naturally in moiſt paſtures, and in woods, in many parts of England. Of this there is a variety, ſuppoſed to be larger than that which grows commonly here, but I could never obſerve any eſſential difference between them; for in ſome places it is found much larger than in others, but when they have been tranſplanted into a garden, they have proved to be the ſame. This hath a tuberous ſolid root which lies deep in the ground, and puts out fibres from the bottom and ſides. The leaves are finely cut, and lie near the ground. The ſtalk riſes a foot and a half high, which is round, channelled, and ſolid, the lower part being naked; but above, where it branches out, there is one leaf placed below every branch, which are cut into finer ſegments than thoſe below. The flowers are white, and ſhaped like thoſe of other umbelliferous plants; the ſeeds are ſmall, oblong, and when ripe are channelled. It flowers in May, and the ſeeds ripen in July, ſoon after which, the whole herb decays to the ground.

The roots of this ſort are frequently dug up, and by the poorer ſort of people are eaten raw, having much reſemblance in taſte to the Cheſnut, from whence it had the title of Bulbocaſtanum. Theſe roots, when boiled, are very pleaſant and delicious, and are ſuppoſed to afford great nouriſhment. The ſwine are very fond of theſe roots, and will root them up, when they are admitted where they grow, and will ſoon become fat with feeding on them.

The ſecond ſort was diſcovered by Dr. Tournefort in the iſland of Crete, but it grows naturally in many other parts of the Levant. I received dried ſamples and ſeeds of this from Zant, where it grows plentifully.

The third ſort I received from the Alps. This is a very low plant, ſeldom riſing above ſix inches high.

Theſe plants delight to grow among graſs, ſo cannot be made to thrive well long in a garden.

BUPHTHALMUM. Lin. Gen. Plant. 876. Aſteriſcus. Tourn. Inſt. R. H. tab. 285. Ox-eye.

The CHARACTERS are,

The empalement is different in the ſeveral ſpecies. It hath a compound radiated flower, compoſed of hermaphrodite and female florets. The hermaphrodite florets compoſe the diſk; theſe are funnel-ſhaped, and cut into five parts at the brim, which ſpread open, and have five ſlender ſtamina, which are ſhort, terminated by cylindrical ſummits. In the center is ſituated an oval compreſſed germen, ſupporting a ſlender ſtyle, crowned by a thick ſtigma. The germen afterward becomes an oblong ſeed, whoſe border is cut into many parts; the female flowers which compoſe the rays (or border) are ſtretched out on one ſide like a tongue, which ſpreads open, and is indented at the top in three parts; theſe have no ſtamina, but a double-headed germen, ſupporting a ſlender ſtyle, crowned by two oblong ſtigma. The germen becomes a ſingle compreſſed ſeed, cut on each ſide.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, the flowers having hermaphrodite and female florets, included in one common empalement, which are both fruitful.

The SPECIES are,

1. BUPHTHALMUM (*Helianthoides*) calycibus foliolis, foliis oppoſitis ovatis ſerratis triplinerviis caule herbaceo. Hort. Upſal. 264. *Ox-eye with a leafy empalement, oval ſawed leaves placed oppoſite, having three veins, and an herbaceous ſtalk.* Chryſanthemum Scrophulariæ folio Americanum. Pluk. Alm. 99. tab. 22. fig. 1.
2. BUPHTHALMUM (*Grandiflorum*) foliis alternis lanceolatis ſubdenticulatis glabris, calycibus nudis caule herbaceo. Hort. Cliff. 415. *Ox-eye with ſmooth ſpear-ſhaped leaves (indented below,) naked empalements, and an herbaceous ſtalk.* Afteroides Alpina ſalicis folio glabro. Tourn. Cor. 51. tab. 487.
3. BUPHTHALMUM (*Salicifolium*) foliis alternis lanceolatis ſubſerratis villoſis calycibus nudis caule herbaceo. Hort. Cliff. 414. *Ox-eye with ſpear-ſhaped leaves placed alternate, ſawed below and hairy, naked empalements, and an herbaceous ſtalk.* After luteus major, foliis ſucciſæ. C. B. P. 266.
4. BUPHTHALMUM (*Spinoſum*) calycibus acutè folioſis, ramis alternis, foliis lanceolatis amplexicaulibus integerrimis caule herbaceo. Hort. Cliff. 414. *Ox-eye with acute leafy empalements, branches placed alternate, and entire leaves embracing the ſtalks, which are herbaceous.* Aſteriſcus annuus, foliis ad florem rigidis. Tourn. Inſt. 497.
5. BUPHTHALMUM (*Seſſile*) floribus axillaribus calycibus folioſis, ſpinis terminalibus, foliis oblongis obtuſis ſeſſilibus. *Ox-eye with flowers coming from the forks of the branches, leafy empalements ending with ſpines, and oblong blunt leaves growing cloſe to the branches.* Aſteriſcus annuus maritimus patulus. Tourn. Inſt. 498.
6. BUPHTHALMUM (*Maritimum*) calycibus obtusè folioſis pedunculatis, ramis foliis alternis, ſpatulatis caule herbaceo. Hort. Cliff. 414. *Ox-eye with blunt leafy empalements, having foot-ſtalks, alternate leaves, and an herbaceous ſtalk.* Aſteriſcus maritimus perennis patulus. Tourn. Inſt. 498.
7. BUPHTHALMUM (*Aquaticum*) calycibus obtusè folioſis ſeſſilibus axillaribus, foliis alternis oblongis obtuſis caule herbaceo. Hort. Cliff. 414. *Ox-eye with blunt leafy empalements ſitting cloſe to the forks of the ſtalk, oblong blunt leaves, and an herbaceous ſtalk.* Aſteriſcus annuus Luſitanicus odoratus. Boerh. Ind. alt. 105.
8. BUPHTHALMUM (*Fruteſcens*) foliis oppoſitis lanceolatis petiolatis bidentatis caule fruticoſo. Hort. Cliff. 415. *Ox-eye with ſpear-ſhaped leaves growing oppoſite, having foot-ſtalks with two teeth, and a ſhrubby ſtalk.* Aſteriſcus fruteſcens leucoii foliis ſereceis & incanis. Hort. Elth. 44. tab. 38.
9. BUPHTHALMUM (*Arboreſcens*) foliis oppoſitis lanceolatis craſſis, glabris utrinque viridibus floribus pedunculatis. *Ox-eye with thick, ſmooth, ſpear-ſhaped leaves growing oppoſite, green on both ſides, flowers having foot-ſtalks, and a tree-like ſtalk.* Aſteriſcus fruteſcens leucoii foliis viridibus & ſplendentibus. Hort. Elth. 43. tab. 38.
10. BUPHTHALMUM (*Incanum*) foliis oppoſitis linearilanceolatis craſſis incanis, floribus ſeſſilibus caule fruticoſo. *Ox-eye with thick, hoary, narrow, ſpear-ſhaped leaves placed oppoſite, flowers growing cloſe to the branches, and a ſhrubby ſtalk.* Aſteriſcus fruteſcens leucoii foliis anguſtiſſimis ſereceis & incanis. Ind. Hort. Chelſ. 27.

The firſt ſort grows naturally in North America. This hath a perennial root and an annual ſtalk: from the root there ariſes many ſtalks, in number proportional to the ſize of the roots; theſe grow upward of

ſix feet high, garniſhed at each joint with two oblong heart-ſhaped leaves placed oppoſite, which have three longitudinal veins, the baſe on one ſide being ſhorter than the other. The flowers come out at the extremity of the branches, having a leafy empalement; they are radiated, of a bright yellow colour, reſembling a ſmall Sun-flower, from whence the inhabitants of America have given it that appellation. It flowers in Auguſt, and when the autumns prove favourable, the ſeeds will ripen in England; but as it propagates eaſily by parting the roots, there are few perſons who are ſolicitous about the ſeed. The beſt time to tranſplant and part the roots, is toward the end of October, when the ſtalks begin to decay. Theſe ſhould be removed every other year, to prevent their ſpreading too far; they are very hardy, ſo will thrive in any ſituation: but as the roots are apt to extend, they are not proper for the borders of ſmall flower-gardens; but in large borders, on the ſides of rural walks, or in ſpaces between ſhrubs, they will be ornamental during their ſeaſon of flowering.

The ſecond ſort grows naturally on the Alps, as alſo in Auſtria, Italy, and the ſouth of France. This hath a perennial root, and an annual ſtalk; it grows near two feet high, with ſlender branching ſtalks, garniſhed with oblong ſmooth leaves ending in a point; the flowers grow at the extremity of the branches, which are of a bright yellow colour, radiated round their borders like thoſe of the Starwort. It flowers in June and July, and the ſeeds ripen in autumn. There are two or three varieties of this, differing in the breadth of their leaves and ſize of their flowers, but from the ſame ſeeds all theſe have been produced.

This ſort is generally propagated by parting the roots, which may be performed at the ſame time, and in the ſame manner as is directed for the firſt ſort. As this doth not ſpread ſo much as the former, a few roots may be allowed room in the borders of the flower-garden, eſpecially thoſe which have little ſun, where theſe will continue a long time in flower.

The third ſort is ſomewhat like the ſecond, but the leaves are broader and obtuſe; the ſtalks and leaves are alſo hairy, in which conſiſts their difference. This flowers at the ſame time with the former, and is propagated in the ſame manner.

The fourth ſort riſes a foot and a half high: the ſtalks divide into many branches upward; the ſide branches riſe much above the middle ſtalk, garniſhed with ſpear-ſhaped hairy leaves, placed alternately; the flowers are produced at the forks of the branches on ſhort foot-ſtalks; the empalement conſiſts of ſeven long, ſtiff, ſpear-ſhaped leaves, ending in a ſharp point; theſe ſpread out beyond the rays of the flower in form of a ſtar. The flower ſits cloſe upon the empalement, the border or rays being compoſed of many female florets, which have one ſide ſtretched out like a tongue, and indented at the end in three parts; the middle or diſk of the flower is compoſed of hermaphrodite flowers, which are tubulous, funnel-ſhaped, and ſlightly indented in five parts at the brim; they are of a bright yellow colour, and are ſucceeded by oblong compreſſed ſeeds. The plants flower in June and July, and their ſeeds ripen in September, ſoon after which the plants decay.

The ſeeds of this ſhould be ſown the beginning of April, on open borders, where they are to remain, and will require no other care, but to keep them clear of weeds, and thin them to the diſtance of a foot and a half, that their branches may have room to ſpread. If the ſeeds are ſown in the autumn, or are permitted to fall when ripe, the plants will come up ſoon after, and theſe will more certainly ripen ſeeds than the ſpring plants.

The fifth and ſeventh ſorts are alſo annual plants, which grow naturally in the ſame countries with the laſt. Theſe ſeldom grow more than one foot high in gardens, and where they are wild not ſo high, but ſend out many ſpreading alternate branches near the root: their leaves, which are oblong, blunt, and hairy, are placed alternate, growing cloſe to the branches without any foot-ſtalks; the leaves of the empalement of the fifth ſort end in a very ſharp ſpine, and are much broader at their baſe than either of the other. The flowers of all theſe have much the appearance of thoſe of the laſt, but ſome are ſmaller, and thoſe of the ſeventh ſort have an agreeable odour. They flower at the ſame ſeaſon, and are propagated in the ſame manner.

The ſixth ſort is a low perennial plant with a ſhrubby ſtalk, which rarely riſes a foot high, ſending out many ſpreading branches from the ſtem, garniſhed with hairy leaves, which are narrow at their baſe, but broad and roundiſh at their extremity; the flowers are produced at the end of the branches, they are yellow, and ſhaped like thoſe of the former ſorts, but the leaves of the empalement are ſoft and obtuſe. Theſe are ſeldom ſucceeded by ſeeds in England, but the plant is eaſily propagated by ſlips during the ſummer ſeaſon; if the cuttings are planted in a bed of freſh loamy earth, and covered with a hand-glaſs, obſerving to ſhade them from the ſun in the heat of the day, and frequently refreſhed with water, they will take root in about ſix weeks, when they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with freſh undunged earth, and placed in a ſhady ſituation till they have taken freſh root; after which they may be removed to a ſheltered ſituation, where they may remain till the end of October, when they muſt be removed to a frame for the winter ſeaſon, being too tender to live abroad in winter in this country; but as they only require protection from hard froſts, they will thrive better when they have a great ſhare of air in mild weather, than if confined in a green-houſe; therefore the beſt method is to place them in a common frame, where they may be fully expoſed in mild weather, but ſcreened from the froſt. This ſort grows naturally in Sicily. It flowers great part of the year, which renders it the more valuable.

The eighth ſort riſes with ſeveral woody ſtems from the root, which grow to the height of eight or ten feet, garniſhed with leaves very unequal in ſize, ſome of which are narrow and long, others are broad and obtuſe; theſe are intermixed, ſometimes coming out at the ſame joint, and often at the intermediate one; they are ſoft, hoary, and placed oppoſite. The foot-ſtalks of the larger leaves have, on their upper ſide, near their baſe, two ſharp teeth ſtanding upward, and a little higher there are generally two or three more, growing on the edge of the leaves. The flowers are produced at the ends of the branches ſingle; theſe are of a pale yellow colour, and have ſcaly empalements. It grows naturally in America. I received another ſort of this from the Havannah, which was found growing naturally there by Dr. Houſtoun, who ſent it by the following title, Chryſanthemum fruticoſum maritimum, foliis glaucis oblongis, flore luteo. Sloan. Hiſt. Jam. 1. p. 125. The leaves of this are ſhorter and thicker than thoſe of the tenth ſort, and have no teeth on their foot-ſtalks, but in other reſpects are very like it; the plants are not ſo hardy. The eighth has been long preſerved in the Engliſh gardens, and was originally brought from Virginia, as I was informed by the Biſhop of London's gardener, who raiſed it in 1696 at Fulham.

The ninth ſort grows naturally in the Bahama Iſlands, from whence I have ſeveral times received the ſeeds. This ſeldom grows much more than three feet high, ſending out many ſtalks from the root, which are ſucculent, except near the root, where they are ligneous, garniſhed with thick, ſucculent, ſpear-ſhaped leaves placed oppoſite; the flowers are produced at the end of the branches upon foot-ſtalks which are two inches long. Theſe flowers are larger than thoſe of the eighth ſort, of a bright yellow colour. They appear in July, Auguſt, and September, but often continue till the end of October.

The tenth ſort grows in the Bahama iſlands, from whence I received the ſeeds. This ſends out many ſlender ſtalks from the root, which riſe near three feet high, garniſhed with long, narrow, thick, ſucculent leaves, which are very hoary, growing oppoſite, embracing the ſtalk at their baſe; the flowers are yellow, and are produced at the end of the ſhoots, having very ſhort foot-ſtalks. Theſe appear at the ſame time with thoſe of the ninth ſort.

As theſe three ſorts do not perfect their ſeeds in this country, they are propagated by cuttings. They ſhould be planted in July, when the plants have been for ſome time expoſed to the open air, whereby their ſhoots will be hardened and better prepared to take root, than when they firſt come abroad. The cuttings ſhould be planted in ſmall pots filled with light loamy earth, and plunged into a very gentle warmth, obſerving to ſhade them from the ſun in the heat of the day, and gently refreſh them with water, but it muſt be given to them ſparingly, for much wet will rot them. In about ſix weeks theſe will have taken root, when they muſt be gradually inured to bear the open air; and ſoon after they ſhould be each planted in a ſeparate ſmall pot filled with light loamy earth, and placed in the ſhade until they have taken freſh root; after which they may be removed to a ſheltered ſituation, where they may remain till the middle of October, when they muſt be removed in the green-houſe. The eighth ſort being hardier than either of the other, may be placed in a common green-houſe; but the other two will thrive better in a warm glaſs-caſe, where they will receive more ſun, and have a drier air. During the winter, they ſhould have but little moiſture, and in very mild weather they ſhould have freſh air admitted to them. In the ſummer they muſt be placed abroad in a ſheltered ſituation, and treated in the ſame manner as other exotic plants.

BUPLEUROIDES. See PHYLLIS.

BUPLEURUM [ſo called, from Βούς, *Bos*, and πλευρὸν, *coſta*, *latus*, becauſe it is commonly believed, that if cows eat of it, it will burſt their bellies.] Lin. Gen. Plant. 291. Hare's-ear.

The CHARACTERS are,

It is a plant with an umbellated flower; the rays of the principal umbel are thin, conſiſting of ten ſmaller umbels, which are erect and ſpread. The involucrum of the great umbel is compoſed of many oval pointed leaves, thoſe of the ſmall have five. The flower hath five ſmall heart-ſhaped petals, which are inflexed; it hath five ſlender ſtamina, which are terminated by roundiſh ſummits. The germen is ſituated below the flower, ſupporting two ſmall reflexed ſtyles, crowned by a ſmall ſtigma. The germen afterward becomes a roundiſh compreſſed fruit which is channelled, dividing in two parts, containing two oblong channelled ſeeds, convex on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, entitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. BUPLEURUM (*Rotundifolium*) involucris univerſalibus nullis, foliis perfoliatis. Hort. Upſal. 64. *Hare's ear, whoſe greater umbel hath no involucrum, and the ſtalks growing through the leaves.* Perfoliata vulgatiſſima ſive arvenſis. C. B. P. 277.
2. BUPLEURUM (*Anguloſum*) involucellis pentaphyllis orbiculatis, univerſali triphyllo ovato, foliis amplexicaulibus cordato-lanceolatis. Lin. Sp. Plant. 236. *Hare's-ear with the ſmall involucrum compoſed of five orbicular leaves, the larger of three oval ones, and heart ſpear-ſhaped leaves embracing the ſtalk.* Perfoliata Alpina anguſtifolia major folio anguloſo. C. B. P.
3. BUPLEURUM (*Odontitis*) involucellis pentaphyllis acutis, univerſali triphyllo, floſculo centrali altiore, ramis divaricatis. Lin. Sp. Plant. 237. *Hare's-ear with ſmaller involucrii, compoſed of five pointed leaves which are acute, thoſe of the larger three-leaved, the flower in the center taller, and the branches ſpreading from each other.* Perfoliata minor anguſtifolia, Bupleuri folio. C. B. P. 277.
4. BUPLEURUM (*Rigidum*) caule dichotomo ſubnudo, involucris minimis acutis. Lin. Sp. Plant. 238. *Hare's-ear with ſtalks growing from the diviſion of the branches, which have no leaves below, and a very ſmall pointed involucrum.* Bupleurum folio rigido. C. B. P. 278.
5. BUPLEURUM (*Tenuiſſimum*) umbellis ſimplicibus alternis pentaphyllis ſubtrifloris. Lin. Sp. Plant. 238. *Hare's-ear with ſingle umbels growing alternate, and five leaves under each three flowers.* Bupleurum anguſtiſſimo folio. C. B. P. 278.
6. BUPLEURUM (*Fruticoſum*) fruteſcens, foliis obovatis integerrimis. Lin. Sp. Plant. 238. *Shrubby Hare's-ear with oblong oval leaves which are entire.* Bupleurum arboreſcens ſalicis folio. Tourn. Inſt. 310. Seſeli Æthiopicum frutex. Dod. Pempt. 312. *Shrubby Hartwort of Æthiopia.*
7. BUPLEURUM (*Difforme*) fruteſcens, foliis vernalibus decompoſitis planis inciſis, æſtivalibus filiformibus angulatis trifidis. Lin. Sp. Plant. 238. *Shrubby Hare's-ear, whoſe ſpring leaves are decompounded, plain, and cut, and the ſummer leaves are narrow, angular, and trifid.* Bupleurum fruteſcens foliis ex uno puncto plurimis junceis tetragonis. Burman. Afr. 195. tab. 71. fol. 1.

The firſt ſort grows naturally upon chalky land among wheat, in ſeveral parts of England, ſo is ſeldom admitted into gardens. The leaves and ſeeds of this plant are uſed in medicine; the herb is eſteemed good for diſſolving ſcrophulous tumours, and is by ſome uſed for internal ailments, ruptures, and bruiſes from a fall. It is called Thoroughwax in Engliſh.

The ſecond, third, fourth, and fifth ſorts are annual. The fifth ſort grows naturally in ſeveral parts of England, the others are natives of the Alps and Pyrenees; theſe are ſeldom cultivated but in botanic gardens for the ſake of variety. Thoſe who are deſirous to have any of theſe ſpecies in their gardens, ſhould ſow their ſeeds in autumn, where the plants are deſigned to remain, for they do not bear tranſplanting well; and keep the plants clean from weeds, which is all the culture they require. They flower in June and July, and their ſeeds ripen in September.

The ſixth ſort hath a woody ſtem, which ſends out many branches, ſo as to form a large head or buſh, covered with a purpliſh bark, and garniſhed with oblong, oval, ſtiff leaves, which are very ſmooth, of a ſea-green colour; the ends of the branches are terminated by umbels of yellow flowers ſomewhat like thoſe of Fennel. Theſe come out in Auguſt, but are ſeldom ſucceeded by perfect ſeeds in England. It grows naturally in the ſouth of France and Italy, near the borders of the ſea.

It is commonly known among gardeners by the title of Shrubby Æthiopian Hartwort, and is now propagated in the nurſery-gardens for ſale. This grows five or ſix feet high, forming a large regular buſh, the leaves continuing green through the year render it more valuable. It is hardy, ſo will thrive in the open air, and may be intermixed with other evergreen ſhrubs of the ſame growth, in the front of taller trees, where their ſtems are deſigned to be excluded from ſight. It is propagated by cuttings, which ſhould be planted in pots filled with freſh loamy earth, and in winter ſheltered under a hot-bed frame; in the ſpring the cuttings will put out roots, but they will not be fit to tranſplant till the autumn following; ſo the pots ſhould be placed in a ſhady ſituation in ſummer, and in dry weather they muſt be refreſhed with water. The young plants may be planted in a nurſery-bed at two feet diſtance for a year or two to get ſtrength, and then tranſplanted where they are to remain.

The ſeventh ſort grows naturally at the Cape of Good Hope, from whence it was introduced to the gardens in Holland. This riſes with a ſhrubby ſtalk to the height of five or ſix feet, ſending out ſome ſide branches, which in the ſpring have their lower parts garniſhed with leaves compoſed of many ſmall plain lobes, which are finely cut like thoſe of Coriander,

of a ſea-green colour, theſe leaves ſoon fall off, and the upper part of the branches are cloſely covered with long ruſh-like leaves having four angles, which come out in cluſters from each joint. The flowers grow in ſpreading umbels at the extremity of the branches, which are ſmall and of an herbaceous colour, and are ſucceeded by oblong channelled ſeeds.

This ſort is commonly propagated by cuttings, which readily take root, if they are planted in April in pots filled with light earth, and plunged into a moderate hot-bed, and when they have taken root, they ſhould be inured to the open air by degrees, and after they have obtained ſtrength, may be planted each into a ſeparate pot filled with light loamy earth, placing them in the ſhade, till they have taken freſh root, when they may be placed with other exotic plants in a ſheltered ſituation, where they may remain till the autumn, when they muſt be removed into the green-houſe, and placed with ſuch hardy plants as require a large ſhare of air in mild weather, and only require a protection from froſt.

If this plant is propagated by ſeeds, they ſhould be ſown in the autumn, ſoon after they are ripe, in pots filled with light earth, which muſt be ſheltered under a frame in winter, and in the ſpring removed to a very gentle hot-bed, which will ſoon bring up the plants; theſe muſt be inured to bear the open air by degrees, and then treated in the ſame manner as thoſe raiſed from cuttings. This plant flowers in July, and the ſeeds ripen in September.

BURMANNIA. Lin. Gen. 397. This genus was ſo titled by Dr. Linnæus, in honour to his friend Dr. Burman, profeſſor of botany at Amſterdam.

The CHARACTERS are,

It hath a cylindrical coloured empalement of one leaf, having three longitudinal membranaceous angles, the flower hath three ſmall oblong petals, ſituated in the mouth of the empalement, it hath ſix ſmall ſtamina, the ſummits are at the mouth of the empalement, two at each; the germen is cylindrical, half the length of the empalement, ſupporting a ſlender ſtyle the length of the corolla, having three obtuſe concave ſtigma: the empalement becomes a triangular cylindrical covering to the ſeeds, opening in three valves, having three cells filled with ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. BURMANNIA (*Diſticha*) ſpica gemina. Burm. Zeyl. 50. *Burmannia with a double ſpike of flowers.*
2. BURMANNIA (*Biflora*) flore gemino. Lin. Sp. 411. *Burmannia with two flowers.* Burmannia ſcapo bifloræ. Flor. Virg. 36.

The firſt ſort grows naturally in Ceylon, in places covered with water moſt part of the year, the root is compoſed of many capillary fibres, from which come out ſix or eight narrow ſpear-ſhaped leaves, near two inches long, which are entire. The flower-ſtalk riſes a ſpan high, garniſhed with five or ſix narrow ſpear-ſhaped leaves which embrace it at their baſe; the ſtalk is terminated by a double ſpike of flowers ſpreading each way: theſe are garniſhed with ſmall blue flowers, included in a ſwelling ſpatha, or ſheath; theſe have each three ſhort petals, ſix ſtamina, and one ſtyle; and in its native ſoil, the empalement of the flower becomes a triangular cover to the ſeeds.

The ſecond ſort grows naturally in Virginia and Carolina, in watery places, this hath a ſtrong fibrous root, from which ariſe ſeveral oblong oval leaves, four or five inches long, which are ſmooth and entire; between theſe ariſes the foot-ſtalk of the flower, which is ſix or eight inches high, terminated by ſpikes of flowers, two growing in each ſpatha or ſheath; theſe are blue, and in their native ſoil are ſucceeded by ſmall ſeeds incloſed in the triangular empalement.

Theſe plants are very difficult to preſerve in gardens; for as they naturally grow in marſhy places, which are covered with water great part of the year, they will not thrive when planted in dry ground, and being too tender to live abroad in England, renders them very difficult to preſerve; therefore whoever is deſirous to have them, ſhould plant them in pots, which ſhould be plunged in troughs of water, ſo deep as to cover the ſurface of the mould therein about three inches. Thoſe troughs in which the firſt ſort is planted, ſhould be placed in a warm ſtove, where they ſhould conſtantly remain, being careful to ſupply the water as it may diminiſh in the troughs from time to time. The troughs in which the ſecond ſort is put, ſhould be placed in a green-houſe in winter to protect the plants from froſt, but in ſummer they may be expoſed in the open air, with this management, if carefully attended to, the plants may be preſerved, and ſometimes may be brought to produce flowers.

BURNET. See POTERIUM and SANGUISORBA.

BURSA PASTORIS, Shepherds-pouch. This is a common weed in moſt parts of England; which propagates ſo faſt by ſeeds, as not to be eaſily cleared when they are permitted to ſhed; for there are commonly four generations of this plant from ſeeds in a year, ſo faſt does the ſeed ripen, and the plants come up; therefore it cannot be too ſoon or carefully rooted out of a garden.

BUTOMUS, [Βότομον, of βοῦς, an ox, and τέμνω, to cut, ſo called, becauſe the leaves of it are ſo acute, that the tongue and lips of oxen, which are great lovers of this plant, are wounded by it, ſo that the blood iſſues forth: it is alſo called Juncus Florida, becauſe it has the leaves of a Ruſh, and produces a fine bunch of flowers.] The Flowering-Ruſh, or Water-Gladiole.

The CHARACTERS are,

The flowers grow in a ſingle umbel, having a ſhort three leaved involucrum. The flower hath ſix roundiſh concave petals, which are alternately ſmaller and more pointed, it hath nine awl-ſhaped ſtamina, ſix of which ſurround the other, and are terminated by double lamellated ſummits; it hath ſix oblong pointed germen, ſupporting a ſingle ſtigma; the germen afterward become ſix oblong pointed capſules, having one cell filled with oblong ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ninth claſs, intitled Enneandria Hexagynia, the flower having nine ſtamina, and ſix germen.

We know but one SPECIES of this genus, viz.

BUTOMUS (*Umbellatus*) Fl. Lap. 159. *The Flowering-Ruſh, or Water-Gladiole.* Juncus floridus major. C. B. P. 112. *Greater Flowering-Ruſh.*

There are two varieties of this plant, one with a roſe coloured flower, and the other with a white, but theſe are only accidental variations, therefore not to be enumerated as diſtinct ſpecies.

The Roſe coloured ſort is pretty common in ſtanding waters, in many parts of England; the other is a variety of this, though leſs common with us near London. Theſe plants may be propagated in boggy places, or by planting them in ciſterns, which ſhould be kept filled with water, that ſhould have about a foot thickneſs of earth in the bottom, into which the roots ſhould be planted, or the ſeed ſown as ſoon as they are ripe; theſe, though common plants, yet produce very pretty flowers, and are worth propagating for variety, eſpecially if in any part of the garden there ſhould be conveniency for an artificial bog, or where there are ponds of ſtanding water, as is many times the caſe, and perſons are at a loſs what to plant in ſuch places, that may appear beautiful; whereas, if theſe, and a few more wild plants, which naturally grow in ſuch places, were taken into the garden, they would have a very good effect in diverſifying the ſeveral parts thereof.

There is another ſpecies, or at leaſt a variety, of this plant, which is found growing near London, intermixed with the common ſort, but not half ſo large either in leaf, ſtalk, or flower; but in other reſpects ſo like it, as to render it very difficult to be diſtinguiſhed from it, for which reaſon I have not enumerated it; though many of the plants ſettled in the river

river Thames, close by the Chelsea garden, where they continued their usual small size many years.

BUXUS, the Box Tree.

The CHARACTERS are,

It hath male and female flowers on the same plant; the male flowers have a three-leaved, and the female a four-leaved empalement, which are concave. The male flowers have two, and the female three concave petals, which are larger than the empalement. The male flowers have four upright stamina, terminated by double erect summits with a rudiment of a germen, but no style or stigma: the female flowers have roundish, blunt, three-cornered germen, supporting three very short styles, crowned by obtuse prickly stigma. The empalement afterward becomes a roundish capsule, shaped like an inverted pottage pot, opening in three cells, each having two oblong seeds, which are cast forth by the elasticity of the pod when ripe.

This genus of plants is ranged in the fourth section of Linnæus's twenty-first class, intitled Moncœcia Tetrandria, there being male and female flowers on the same plant, and the male flowers having four stamina.

The SPECIES are.

1. BUXUS (*Arborescens*) arborescens, foliis ovatis. *Tree Box with oval leaves.* Buxus arborescens. C. B. P. 232.
2. BUXUS (*Angustifolia*) arborescens foliis lanceolatis. *Tree Box with spear-shaped leaves.* Buxus angustifolia. Raii Syn. 445. *Narrow-leaved Box.*
3. BUXUS (*Suffruticosa*) humilis foliis orbiculatis. *Dwarf Box with round leaves.* Buxus humilis. Dod. pempt. 782. *Dwarf or Dutch Box.*

These are three certainly distinct species. The two sorts of Tree Box have been frequently raised from seeds, and constantly produced plants of the same kind from those the seeds were taken from; and the Dwarf Box will never rise to any considerable height with any culture, nor have I ever seen this sort flower, where the plants have been encouraged to grow many years in the greatest luxuriancy. There are two or three varieties of the first sort, which are propagated in the gardens, one with yellow, and the other white striped leaves. The other hath the tops of the leaves only marked with yellow, which is called Tiped Box.

The first and second sorts grow in great plenty upon

Box-hill, near Darking in Surry, where were formerly large trees of these kinds; but of late they have been pretty much destroyed, yet there are great numbers of the trees remaining, which are of a considerable bigness. The wood of this tree is very useful for turners, engravers, and mathematical instrument-makers, the wood being so hard, close, and ponderous, as to sink in water, which renders it very valuable for divers utensils.

All the varieties of the tree or large Box are proper to intermix in clumps of Evergreens, &c. where they add to the variety of such plantations; these may be propagated by planting the cuttings in autumn in a shady border, observing to keep them watered until they have taken root, when they may be transplanted into nurseries, till they are fit for the purposes intended. The best season for removing these trees is in October, though indeed, if care be used to take them up with a good ball of earth, they may be transplanted almost at any time, except in summer. These trees are a very great ornament to cold and barren soils, where few other things will grow; they may also be propagated by laying down the branches, or from seeds: the last being the best method to have them grow to be large, the seeds must be sown soon after they are ripe in a shady border, which must be duly watered in dry weather.

The Dwarf kind of Box is used for bordering flower-beds or borders; for which purpose it far exceeds any other plant, it being subject to no injuries from cold or heat, and is of long duration, is very easily kept handsome, and, by the firmness of its rooting, keeps the mould in the borders from washing into the gravel-walks, more effectually than any plant whatever. This is increased by parting the roots, or planting the slips; but as it makes so great an increase of itself, and so easily parts, it is hardly worth while to plant the slips that have no roots. It is now become so common, that it may be purchased from the nurseries at a cheap rate.

The manner of planting this in edgings, &c. is so well understood by every working gardener, that it would be needless to mention any thing of that kind here.

BYTTNERIA. See BASTERIA.

C.

CAAPEBA. See CISSAMPELUS.

CABBAGE. See BRASSICA.

CABINET, in a garden, is a conveniency which differs from an arbour, in this, that an arbour or summer-house is of great length, and arched over head in the form of a gallery; but a cabinet is either square, circular, or in cants, making a kind of salon, to be set at the ends, or in the middle of a long arbour.

CACALIANTHEMUM. See CACALIA.

CACALIA, Foreign Coltsfoot.

The CHARACTERS are,

It hath compound flowers which are included in one common, cylindrical, scaly empalement: the flowers are tubulous and funnel-shaped, cut at the top into five parts which stand erect; these have each five short slender stamina, terminated by cylindrical summits. The germen is crowned with down, supporting a slender style, crowned by two oblong recurved stigma; the germen afterward becomes a single oblong seed, crowned with long down.

This genus of plants is ranged in the first section of Linnæus's twenty-first class, intitled Syngenesia polygamia æqualis; these have all hermaphrodite flowers which are fertile.

The SPECIES are,

1. CACALIA (*Alpina*) foliis reniformibus acutis denticulatis calycibus subtrifloris. Gouan. Monsp. 429. *Cacalia with kidney-shaped leaves which are sharply indented, and generally three flowers in each empalement.* Cacalia foliis crassis hirsutis. C. B. P. 197.
2. CACALIA (*Glabra*) foliis cutaneis acutioribus & glabris. C. B. P. 198. *Cacalia with smooth leaves, having acute points.* Cacalia glabro folio. Clus. Hist. 2. p. 115.
3. CACALIA (*Suaveolens*) caule herbaceo foliis hastato-sagittatis denticulatis, petiolis supernè dilatatis. Hort. Upsal. 254. *Cacalia with an herbaceous stalk, spear-shaped indented leaves, and the upper side of the foot-stalk spreading.* Cacalia Americana procerior, folio triangulari per basin auriculato, floribus albis. Edit. prior.

4. Cacalia (*Atriplicifolia*) caule herbaceo, foliis ſubcordatis dentato-ſinuatis, calycibus quinquefloris. Lin. Sp. Plant. 835. *Cacalia with an herbaceous ſtalk, heart-ſhaped ſinuated leaves, and five florets in each empalement.* Nardus Americana procerior, foliis cæſiis. Pluk. Alm. 251.
5. Cacalia (*Ficoides*) caule fruticoſo, foliis compreſſis carnoſis. Lin. Sp. Plant. 834. *Cacalia with a ſhrubby ſtalk, and fleſhy compreſſed leaves.* Senecio Africanus arboreſcens, ficoidis folio & facie. Com. Rar. Plant. 40.
6. Cacalia (*Kleinia*) caule fruticoſo compoſito, foliis lanceolatis planis, petiolorum cicatricibus obſoletis. Lin. Sp. Plant. 834. *Cacalia with a compound ſhrubby ſtalk, plain ſpear-ſhaped leaves, and the foot-ſtalks leaving ſcars.* Cacalianthemum folio nerii glauco. Hort. Elth. 61. tab. 54.
7. Cacalia (*Papillaris*) caule fruticoſo obvollato ſpinis petiolaribus truncatis. Lin. Sp. Plant. 834. *Cacalia with a ſhrubby ſtalk, guarded on every ſide with broken rough foot-ſtalks.* Cacalianthemum caudice papillari. Hort. Elth. 63. tab. 55.
8. Cacalia (*Ante-euphorbium*) caule fruticoſo, foliis ovato-oblongis, petiolis baſi linea triplici deductis. Lin. Sp. Plant. 834. *Cacalia with a ſhrubby ſtalk, oblong oval leaves, and three lines connected to the baſe of the foot-ſtalk.* Kleinia foliis carnoſis planis ovato-oblongis. Hort. Cliff. 395.
9. Cacalia (*Sonchifolia*) caule herbaceo, foliis lyratis amplexicaulibus dentatis. Lin. Sp. 1169. *Cacalia with an herbaceous ſtalk, and lyre-ſhaped indented leaves embracing the ſtalk.*
10. Cacalia (*Lutea*) caule herbaceo, foliis quinquepartitis acutis ſubtus glaucis, floribus terminalibus pedunculis longiſſimis. *Cacalia with an herbaceous ſtalk, leaves divided into five acute parts, glaucous on their under ſide, and flowers with long foot-ſtalks terminating the ſtalks.*

The firſt ſort grows naturally in Auſtria, and the Helvetian mountains, but is frequently preſerved in curious gardens for the ſake of variety. This hath a fleſhy root which ſpreads in the ground, from which ſpring up many leaves, ſtanding on ſingle foot-ſtalks, ſhaped like thoſe of Ground Ivy, but of a thicker texture, of a ſhining green on their upper ſide, but white on their under; between theſe ariſe the foot-ſtalk, which is round, branching toward the top, and grows a foot and a half high; under each diviſion of the ſtalk is placed a ſingle leaf, of the ſame ſhape with thoſe below, but much ſmaller; the branches are terminated by purpliſh flowers, growing in a ſort of umbel. Theſe are ſucceeded by oblong ſeeds, crowned with down.

The ſecond ſort hath the appearance of the firſt, but the leaves are almoſt heart-ſhaped, pointed, and ſharply ſawed on their edges, and on both ſides very green; the ſtalks riſe higher; the leaves upon the ſtalks have much longer foot-ſtalks than thoſe of the firſt. The flowers of this are of a deeper purple colour. This grows naturally on the Alps. They flower toward the end of May, or the beginning of June.

The third ſort grows naturally in North America. This hath a perennial creeping root, which ſends out many ſtalks, garniſhed with triangular ſpear-ſhaped leaves, ſharply ſawed on their edges, of a pale green on their under ſide, but a deep ſhining green above, placed alternately. The ſtalks riſe to the height of ſeven or eight feet, and are terminated by umbels of white flowers, which are ſucceeded by oblong ſeeds crowned with down. It flowers in Auguſt, and the ſeeds ripen in October. This plant multiplies greatly by its ſpreading roots, and alſo by the ſeeds, which are ſpread to a great diſtance by the wind, the down which adheres to them being greatly aſſiſting to their conveyance. The roots of this plant, which have been caſt out of the Chelſea garden, have been carried by the tides to a great diſtance, where they have lodged on the banks of the river, and faſtened themſelves to the ground, and have increaſed ſo much, as that in a few years, it may appear as a native of this country. The ſtalks decay in autumn, and new ones ariſe in the ſpring.

The fourth ſort is a native of America, but has been many years in ſome curious gardens. This hath a perennial root, and an annual ſtalk. The root is compoſed of many fleſhy ſpreading tubers, ſending out ſeveral ſtrong ſtalks in the ſpring, which riſe four or five feet high, garniſhed with roundiſh heart-ſhaped leaves, greatly indented on their edges, of a ſea-green on their under ſide, but darker above, placed alternately the length of the ſtalks, which are terminated by umbels of yellowiſh herbaceous flowers, appearing in July and Auguſt, and are ſucceeded by ſeeds like thoſe of the former ſort, which ripen in October.

The firſt and ſecond ſorts are propagated by parting their roots, for they ſeldom produce good ſeeds in England. The beſt time to tranſplant and part their roots is in autumn. They require a loamy ſoil and a ſhady ſituation.

The third and fourth ſorts propagate in great plenty, both by their ſpreading roots, and alſo their ſeeds. The roots ſhould be tranſplanted in autumn, and require a moiſt ſoil and an open ſituation. If the ſeeds are permitted to ſcatter, the plants will come up in the ſpring without any care.

The fifth ſort grows naturally at the Cape of Good Hope. This riſes with ſtrong round ſtalks to the height of ſeven or eight feet, which are woody at bottom, but ſoft and ſucculent upward, ſending out many irregular branches, garniſhed more than half their length with thick, taper, ſucculent leaves, a little compreſſed on two ſides, ending in points, covered with a whitiſh glaucous farina, which comes off when handled. Theſe, when broken, emit a ſtrong odour of turpentine, and are full of a viſcous juice; at the extremity of the branches the flowers are produced in ſmall umbels; they are white, tubulous, and cut into five parts at the top. The ſtigma which crowns the ſtyle is of a dark purple colour, and ſtands erect above the tube. The ſtamina are much ſhorter, and ſurround the oblong germen, which is ſituated in the center of the tube, and is crowned by long, white, hairy down. The germen afterward becomes an oblong ſeed, with the ſame down adhering to it; but theſe do not ripen in England. Some of the noblemen in France have the leaves of this plant pickled; in doing of which, they have a contrivance to preſerve the white farina with which they are covered, and thereby render them very beautiful.

This ſort is eaſily propagated by cuttings during the ſummer months: theſe ſhould be cut from the plants and laid to dry a fortnight, that the wound may be healed over before they are planted. Moſt people plunge the pots, in which theſe are planted, into a moderate hot-bed, to forward their putting out roots; but if they are planted in June or July, they will root as well in the open air. I have frequently had the branches broken off by accident, and fallen on the ground, which have put out roots without any care. Theſe branches may be kept ſix months out of the ground, and will take root if planted. This ſhould have a light ſandy earth, and in winter be placed in an airy glaſs-caſe, where they may enjoy the ſun and air in mild weather, but muſt be protected from froſt. During the winter ſeaſon, the plants muſt have but little water; and in ſummer, when they are placed in the open air, it ſhould not be given them too often, nor in great quantity, but treated like the Ficoides, and other ſucculent plants from the ſame country. It flowers uſually in autumn, but is not conſtant to any ſeaſon.

The ſixth ſort grows naturally in the Canary Iſlands, but has been long an inhabitant in the Engliſh gardens. This riſes with a thick fleſhy ſtem, divided at certain diſtances, as it were, in ſo many joints; each of theſe diviſions ſwell much larger in the middle than they do at each end; the ſtalks divide into many irregular branches of the ſame form, which, toward their extremities, are garniſhed with long, narrow, ſpear-ſhaped leaves, of a glaucous colour, ſtanding all round the ſtalks without order. As theſe fall

off, they leave a ſcar at the place, which always remains on the branches. The flowers are produced in large cluſters, at the extremity of the branches, which are tubulous, and of a faint Carnation colour. They appear in Auguſt and September, but continue great part of October, and are not ſucceeded by ſeeds in this country. There have been ſtones and foſſils dug up at a great depth in ſome parts of England, which have very perfect impreſſions of this plant upon them; from whence Dr. Woodward has ſuppoſed, the plants were lodged there at the univerſal deluge; and finding the impreſſions of many other plants and animals, which are natives of thoſe iſlands, he concludes that the waters flowed hither from the ſouth-weſt.

This plant has been called Cabbage-tree by the gardeners, I ſuppoſe from the reſemblance which the ſtalks of it have to that of the Cabbage: others have titled it Carnation-tree, from the ſhape of the leaves, and colour of the flowers.

It is propagated by cuttings, in the ſame manner as the former ſort, and the plants require the ſame culture; but muſt have a dry warm glaſs-caſe in winter, and very little water, being very ſubject to rot with wet. In ſummer they muſt be placed in the open air, in a warm ſheltered ſituation, and in very dry weather refreſhed moderately with water. With this management the plants will flower annually, and grow to the height of eight or ten feet.

The ſeventh ſort reſembles the ſixth in its form and manner of growth, but the leaves are narrower and more ſucculent. Theſe do not fall off entire like the other, but break off at the beginning of the foot-ſtalk, which are very ſtrong and thick; and always continue, ſo that the main ſtalk of the plant, and the lower part of the branches, which are deſtitute of leaves, are ſet round on every ſide with theſe truncated foot-ſtalks. This ſort hath not as yet produced any flowers in England. It is propagated in the ſame manner as the two former ſorts, from cuttings, and the plants muſt be treated as hath been directed for the fifth ſort, but require to be kept drier, both in winter and ſummer; therefore, in very wet ſeaſons, the plants ſhould be ſheltered from hard rains, which often cauſe them to rot, when they are expoſed thereto; but they require the open air in ſummer. This ſort grows naturally at the Cape of Good Hope.

The eighth ſort has been long preſerved in the Engliſh gardens, and was generally titled Ante-euphorbium, ſuppoſing it to have a contrary quality to the Euphorbium. This riſes with many ſucculent ſtalks from the root, as large as a man's finger, which branches out upward, into many irregular ſtalks of the ſame form, but ſmaller, garniſhed with flat, oblong, ſucculent leaves, placed alternately round the branches; under each foot-ſtalk there are three lines or ribs, which run longitudinally through the branches joined together. This ſort very rarely flowers in Europe, but is propagated by cuttings in the ſame manner as the fifth, and is equally hardy. It muſt have very little wet, eſpecially in winter, and requires a dry, ſandy, poor ſoil.

The ninth ſort grows naturally in Ceylon, China, and alſo in the Spaniſh Weſt-Indies, from whence I received the ſeeds. This ſort ſeldom continues longer than to ripen its ſeeds. The ſtalk riſes near two feet high, branching a little toward the top; the leaves are cut on their ſides, and ſinuated ſomewhat like thoſe of Muſtard, ſitting cloſe to the ſtalks, which are terminated by flowers formed almoſt in an umbel; theſe are in ſome plants yellow, and in others purple; they are ſmall, and are ſucceeded by oblong oval ſeeds, having a feathery down. It flowers in July, and the ſeeds ripen in September, ſoon after which the plant decays.

This is propagated by ſeeds, which, if ſown in the autumn ſoon after they are ripe in a pot, and plunged into the tan-bed in the ſtove, will more certainly ſucceed than thoſe ſown in the ſpring; but where there is not ſuch conveniency, the ſeeds ſhould be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be planted on another hot-bed to bring them forward, ſhading them till they have taken new root, after which air ſhould be daily admitted to them in proportion to the warmth of the ſeaſon. When the plants have acquired ſtrength, they ſhould be planted in pots, and either plunged into a moderate hot-bed under a deep frame, or placed in a glaſs-caſe, where they will flower and perfect their ſeeds.

The tenth ſort grows naturally at St. Helena, from whence I received the plants: the roots of this ſort ſpread and increaſe under the ſurface, ſo is eaſily propagated by parting the roots; the leaves ariſe immediately from the root, having very ſhort foot-ſtalks; theſe are cut into five or ſix long acute ſegments almoſt to the midrib, the ſegments are alſo acutely cut on their ſides in two or three places: the under ſide of the leaves are glaucous, their upper ſide of a dark green. The flower-ſtalk ariſes between the leaves immediately from the roots; this is naked, about eight inches high, terminated by ſix or eight yellow compound flowers ſtanding on long foot-ſtalks, almoſt umbellatim; the flowers are ſucceeded by oblong ſeeds, which rarely ripen in England.

As this plant increaſes ſo faſt by its root, there is little want of the ſeeds; therefore the roots may be parted either the beginning of September, or the latter end of March, and ſhould be planted in pots filled with light earth, and plunged into the tan-bed in the ſtove, where it ſhould be conſtantly kept, being too tender to thrive elſewhere in this climate.

CACAO. Tourn. Inſt. R. H. 660. Theobroma. Lin. Gen. 806. The Chocolate-nut.

The CHARACTERS are,

The empalement is compoſed of five ſpear-ſhaped leaves, which ſpread open. The flower hath five petals, which are irregularly indented, and ſpread open; it hath five erect ſtamina, which are as long as the petals, terminated by pointed ſummits. In the center is placed the oval germen, ſupporting a ſingle ſtyle, the length of the ſtamina, crowned by an erect ſtigma. The germen afterward becomes an oblong pod, ending in a point; which is woody, warted, and divided into five cells, which are filled with oval, compreſſed, fleſhy ſeeds.

This genus of plants was conſtituted by father Plumier, who communicated the characters, which he had drawn in America, to Dr. Tournefort, who has inſerted it in the Appendix to his Inſtitutions. Dr. Linnæus has joined this to the Guazuma of Plumier, under the title of Theobroma; but as the fruit of theſe plants are very different from each other, I ſhall keep them under different genera.

We have but one SPECIES of this plant, which is,

CACAO. Cluſ. Exot. *The Chocolate-nut-tree.*

This tree is a native of America, and is found in great plenty in ſeveral places between the tropics, but particularly at Caracca and Carthagena, on the river Amazons, in the iſthmus of Darien, at Honduras, Guatimala, and Nicaragua. At all theſe places, it grows naturally without culture; but it is cultivated in many of the iſlands which are poſſeſſed by the French and Spaniards, and was formerly planted in ſome of the iſlands which are in the poſſeſſion of the Engliſh; but it has been neglected for many years paſt, ſo that at preſent it is ſo ſcarce in thoſe places, that the Engliſh are ſupplied with it by the French and Spaniards, who make the inhabitants pay them a good price for it; and as there is a great quantity of it conſumed in England, conſequently it muſt make an alteration in the balance of trade greatly to the prejudice of the Engliſh; which might be eaſily remedied, if the planters in our colonies were but the leaſt induſtrious; ſince, as it formerly grew on thoſe iſlands, ſo as to produce not only a ſufficient quantity for their own conſumption, but to ſupply Europe with great quantities, there can be no objection to the planting it in thoſe iſlands again, eſpecially in thoſe ſituations where the ſugar canes do not thrive to advantage.

I ſhall

I ſhall therefore ſubjoin the beſt account of this plant, and the culture which it requires in thoſe countries, with the profits which have ariſen from it to thoſe who have planted ſome of theſe trees of late years, by way of experiment, in order to excite others to follow their example; and ſhall afterward give directions for cultivating it in England, by way of curioſity.

In making a plantation of Chocolate-trees, you muſt firſt be very careful in the choice of the ſituation, and the ſoil, otherwiſe there will be ſmall hopes of ſucceſs. As to the ſituation, it ſhould be in a place where the trees may be protected from ſtrong winds, to which if they are expoſed, they will ſoon be deſtroyed: ſo that in ſuch places where torrents of water have waſhed away the earth ſo as to leave broad and deep furrows (which the inhabitants of thoſe iſlands call gullies,) theſe trees will thrive exceedingly: and as theſe are very frequently to be found in thoſe iſlands, and many of them are of large extent, and not much cultivated, it may be a great improvement to ſome eſtates, which, at preſent, are of ſmall value. The ſoil in theſe gullies is generally rich and moiſt, which is what theſe trees require; ſo that they will make great progreſs in theſe places, as hath been experienced by thoſe perſons, who have lately made trials of the plants in theſe ſituations; but where there are not a ſufficient number of theſe gullies, choice ſhould be made of a ſituation which is well ſheltered by large trees; or, if there are not trees already grown, there ſhould be three or four rows planted round the ſpot which is deſigned for the Chocolate-trees, of ſuch ſorts which are of quickeſt growth; and within theſe rows there ſhould be ſome Plantain-trees, planted at proper diſtances, which being very quick of growth, and the leaves very large, will afford a kindly ſhelter to the young Chocolate-trees placed between them.

The Chocolate-trees which are cultivated, ſeldom grow to more than fourteen or fifteen feet in height, nor do they ſpread their branches very wide; ſo that if the Plantain-trees are placed in rows, about twenty four feet aſunder, there will be room enough for two rows of Chocolate-trees between each row of Plantains; and if they are placed at ten feet diſtance in the rows, it will be ſufficient room for them. Thoſe trees which are found wild in uncultivated places, are generally of much larger growth, which may be occaſioned by the other trees, amongſt which theſe are found growing; for, being protected from the winds by thoſe, they are not ſo much in danger therefrom, as thoſe which are cultivated: and the other trees cloſely ſurrounding them, will naturally draw them up to a greater height: however, that is not a deſirable quality in theſe trees; for the lower they are, the better the fruit may be gathered without hurting the trees, and the leſs they are expoſed to the injuries of the weather; ſo that the inhabitants never deſire to have their trees above twelve or fourteen feet high.

The ſoil upon which theſe trees thrive to moſt advantage, is a moiſt, rich, deep earth; for they generally ſend forth one tap root, which runs very deep into the ground, ſo that wherever they meet with a rocky bottom near the ſurface, they ſeldom thrive, nor are they of long continuance; but in a rich, deep, moiſt ſoil, they will produce fruit in pretty good plenty the third year from ſeed, and will continue fruitful for ſeveral years after.

Before the plantation is begun, the ground ſhould be well prepared by digging it deep, and clearing it from the roots of the trees, and noxious plants, which, if ſuffered to remain in the ground, will ſhoot up again after the firſt rain, and greatly obſtruct the growth of the plants; ſo that it will be almoſt impoſſible to clear the ground from thoſe roots, after the Chocolate plants are come up, without greatly injuring them.

When the ground is thus prepared, the rows ſhould be marked out by a line, where the nuts are to be

planted, ſo as that they may be placed in a quincunx order, at equal diſtance every way, or at leaſt that the Plantain-trees between them may form a quincunx, with the two rows of Chocolate-trees, which are placed between each row of them.

In making a plantation of Chocolate-nut-trees, the nuts muſt be planted where the trees are to remain; for if the plants are tranſplanted, they ſeldom live; and thoſe which ſurvive it, will never make thriving trees; for, as I before obſerved, theſe trees have a tender tap root, which, if broke, or any way injured, the tree commonly decays.

The nuts ſhould always be planted in a rainy ſeaſon, or at leaſt when it is cloudy weather, and ſome hopes of rain falling ſoon after. As the fruit ripens at two different ſeaſons, viz. at Midſummer and at Chriſtmas, the plantation may be made at either of thoſe; but the chief care muſt be to chooſe ſuch nuts as are perfectly ripe and ſound, otherwiſe the whole trouble and expence will be loſt. The manner of planting the nuts is, to make three holes in the ground, within two or three inches of each other, at the place where every tree is to ſtand; and into each of theſe holes ſhould be one ſound nut planted about two inches deep, covering them gently with earth. The reaſon for putting in three nuts at every place is, becauſe they ſeldom all ſucceed; or, if moſt of them grow, the plants will not be all equally vigorous; ſo that when the plants have had one year's growth, it is very eaſy to draw up all the weak unpromiſing plants, and leave the moſt vigorous; but in doing this, great care ſhould be had to the remaining plants, ſo as not to injure or diſturb their roots in drawing the other out.

It is very proper to obſerve, that the Chocolate-nuts will not retain their growing faculty long after they are taken from the trees, ſo that there is no poſſibility of tranſporting them to any great diſtance for planting; nor ſhould they be kept long out of the ground, in the natural places of their growth. There are ſome authors who have written the hiſtory of this tree, and diſtinguiſh three different ſorts of the nuts, from the colour of their ſkins, one of which is of a whitiſh green colour, one of a deep red, and the third of a red and yellow colour; but theſe are not ſpecifically different, but all ariſe from ſeeds of the ſame tree, as is the caſe of our Filberts, which differ in the colour of their ſkins, but are of the ſame colour within, and have the ſame taſte. There are others, who would diſtinguiſh theſe nuts by their ſize and form, ſome being large and thick, others almoſt as flat as Beans; but theſe differences, I have been credibly informed, ariſe from ſome accident, as thoſe trees which are young and vigorous, and grow upon a deep rich ſoil, will always produce larger and better nouriſhed fruit, than thoſe which ſtand on a ſhallow dry ground, and are unthriving trees: as will alſo the age of a tree make a great alteration in the ſize of the fruit; for old trees are generally obſerved to produce ſmaller and flatter nuts than thoſe which are young, or than the ſame trees did bear while they were vigorous.

When the Chocolate-trees firſt appear above ground, they are very tender, and ſubject to great injuries from the ſtrong winds, the ſcorching ſun, or great droughts, for which reaſon the planters are obliged to guard againſt all theſe enemies, firſt, by making choice of a ſheltered ſituation, or at leaſt by planting trees to form a ſhelter; and, if poſſible, to have the plantation near a river, for the conveniency of watering the plants the firſt ſeaſon, until they have made ſtrong roots, and are capable of drawing their nouriſhment from ſome depth in the earth, where they meet with moiſture. But in order to ſhelter the plants from the ſcorching rays of the ſun, they generally plant two rows of Caſſada between each row of Chocolate-trees, which will grow about ſeven or eight feet high, and ſcreen the young plants from the violence of the ſun the firſt ſeaſon; after which time, they will be in leſs danger of injury therefrom;

and the following ſeaſon, when the Caſſada is taken up for uſe, the ground ſhould be worked between the young plants, being very careful not to injure their roots by this operation. This method of planting the Caſſada between the young Chocolate-trees, is of great advantage to the planter; for when the roots of the Caſſada are taken up for uſe, it will defray the expence of keeping the ground clean from weeds, without which the young plants will come to nothing. The Plantains alſo, which will be fit to cut in about twelve months after planting, will defray the whole expence of preparing the ground, ſo that the produce of the Chocolate-trees will be neat profit; for as the Plantains produce fruit and decay, they will be ſucceeded by ſuckers, which will produce fruit in eight months after; whereby there will be a continual ſupply of food for the negroes, which will more than pay for keeping the ground wrought, and clear from weeds, until the Chocolate-trees begin to produce fruit, which is generally the third year after planting.

The planters uſually ſet the Plantain-trees two or three months before the Chocolate-nuts are ripe, that they may be large enough to afford ſhelter to the young plants when they come up; and the Caſſada is always planted a month or ſix weeks before the Chocolate-nuts, for the ſame reaſon. Some people plant Potatoes, others Cucumbers and Melons, or Water Melons, between the rows of Chocolate plants; which, they ſay, will prevent the weeds from riſing to injure the young plants; for as all theſe trail on the ground, they occupy the whole ſurface, and prevent the weeds from growing: but where this is practiſed, it ſhould be done with great caution, leſt, by being over-covetous, you injure the young Chocolate-nuts ſo much, that they may never recover it; therefore great care ſhould be taken to reduce the ſhoots of theſe plants, whenever they approach the Chocolate-trees; otherwiſe they will ſoon greatly injure, if not totally deſtroy them.

In about ſeven or eight days after the Chocolate-nuts are planted, the young plants will begin to appear above ground; when they ſhould be carefully looked over, to ſee if any of them are attacked by inſects; in which caſe, if the inſects are not timely deſtroyed, they will ſoon devour all the young plants; or if there ſhould be any weeds produced near the plants, they ſhould be carefully cut down with a hoe; in doing which, great care ſhould be taken that neither the tender ſhoot, nor the rind of the bark are injured.

About twenty days after the plants have appeared, they will be five or ſix inches high, and have four or ſix leaves, according to the ſtrength of the plants. Theſe leaves are always produced by pairs, oppoſite to each other, as are alſo the branches; ſo that they make very regular handſome heads, if they are not injured by winds. In ten or twelve months they will be two feet and a half high, and have fourteen or ſixteen leaves. By this time the Caſſada, which was planted between the rows of Chocolate plants, will have large roots fit for uſe, therefore ſhould be taken up; and the ground being then wrought over again, will greatly encourage the young plants.

In two years time the plants will have grown to the height of three feet and a half, or ſometimes four feet, many of which will begin to flower; but the careful planters always pull off all theſe bloſſoms; for if they are permitted to remain to produce fruit, they will ſo much weaken the trees, that they ſeldom recover their ſtrength again, ſo as to become vigorous. When theſe plants are two years and a half old, they will produce flowers again, ſome of which are often left to bear fruit; but the moſt curious planters pull off all theſe, and never leave any to produce fruit until the third year; and then but a few, in proportion to the ſtrength of the trees; by which method, their trees always produce larger and better nouriſhed fruit, than thoſe which are ſuffered to bear a larger quantity, and will continue much longer in vigour. The fourth year they ſuffer their trees to bear

a moderate crop, but they generally pull off ſome flowers from thoſe trees which are weak, that they may recover ſtrength before they are too old.

From the time when the flowers fall off, to the maturity of the fruit, is about four months. It is eaſy to know when the fruit is ripe by the colour of the pods, which become yellow on the ſide next the ſun. In gathering the fruit, they generally place a negro to each row of trees; who, being furniſhed with a baſket, goes from tree to tree, and cuts off all thoſe which are ripe, leaving the others for a longer time to ripen. When the baſket is full, he carries the fruit, and lays it in a heap at one end of the plantation; where, after they have gathered the whole plantation, they cut the pods lengthways, and take out all the nuts, being careful to diveſt them of the pulp which cloſely adheres to them; and then they carry them to the houſe, where they lay them in large caſks, or other veſſels of wood, raiſed above ground, and cover them with leaves of the Indian Reed and mats, upon which they lay ſome boards, putting ſome ſtones thereon to keep them down cloſe, in order to preſs the nuts. In theſe veſſels the nuts are kept four or five days; during which time, they muſt be ſtirred and turned every morning; otherwiſe they will be in danger of periſhing from the great fermentation they are uſually in. In this time they change from being white to a dark red or brown colour. Without this fermentation, they ſay the nuts will not keep; but will ſprout, if they are in a damp place, or ſhrivel and dry too much, if they are expoſed to heat.

After the nuts have been thus fermented, they ſhould be taken out of the veſſels and ſpread on coarſe cloths, where they may be expoſed to the ſun and wind; but at night, or in rainy weather, they muſt be taken under ſhelter, otherwiſe the damp will ſpoil them. If the weather proves fair, three days time will be long enough to dry them, provided they are carefully turned from time to time, that they may dry equally on every ſide. When they are perfectly dry, they may be put up in boxes or ſacks, and preſerved in a dry place until they are ſhipped off, or otherwiſe diſpoſed of. The freſher theſe nuts are, the more oil is contained in them; ſo that the older they are, the leſs they are eſteemed.

Theſe trees do not produce their fruit on the young branches, or at their extremities, as moſt other trees do; but from the trunk, and the larger branches, come out the buds for flowers and fruit. While the trees are young, they do not produce their fruit in great plenty; for before the trees are eight years old, they reckon it a good crop to have twenty-eight or thirty pods on each tree at one gathering, eſpecially that at Midſummer; which is always a much worſe crop than the Chriſtmas ſeaſon, which is occaſioned by the much greater drought of the ſpring; for the autumns being the rainy ſeaſons, the Chocolate-trees produce a much greater quantity of fruit. When the trees are full grown and vigorous, they will ſometimes produce two hundred, or two hundred and forty pods at one ſeaſon; which will make ten or twelve pounds of Chocolate, when dried; ſo that it is a very profitable commodity, and can be managed with very little charge, when compared with ſugar. I have been credibly informed by a perſon of great worth and integrity, who reſided ſome years in America, that he has ſeen as much Chocolate gathered from one tree in a year, as hath been worth thirty ſhillings ſterling on the ſpot: ſo that the trouble of gathering and preparing for the market, being much leſs than for many other commodities which are manufactured in the Britiſh colonies, it is ſurpriſing it ſhould be neglected; eſpecially as it yields ſo large a ſhare of ſuſtenance to the wealthier inhabitants of thoſe colonies, that they cannot live comfortably without it, and purchaſe it from the French and Spaniards at a conſiderable price; which in time muſt greatly impoveriſh the colonies.

The Chocolate-trees, if planted on a good ſoil, and properly taken care of, will continue vigorous and fruitful twenty-five or thirty years: therefore the charge of cultivating a plantation of theſe trees, muſt be much leſs than that of Sugar; for although the ground between the rows of plants will require to be often hoed and wrought, yet the firſt working of a ground to make a new plantation of Sugar, Indigo, Caſſada, &c. is a larger expence than the after-workings are. Beſides, Sugar-canes require as much labour in their cultivation, as any plant whatever; and ſince the inſects which deſtroy the Sugar-canes, have ſpread ſo much in the Britiſh colonies, nothing is a more uncertain crop than Sugar; for which reaſon, I think it would be greatly worth thoſe planters care, who are poſſeſſed of proper lands for the Chocolate-trees, to make ſome ſmall trials at leaſt, to be convinced of the truth of this fact.

The leaves of theſe trees being large, make a great litter upon the ground when they fall; but this is not injurious, but rather of ſervice to the trees; for the ſurface of the ground being covered with them, they preſerve the moiſture in the ground, and prevent its evaporating; which is of great uſe to the young tender roots, which are juſt under the ſurface; and when the leaves are rotten, they may be buried in digging the ground, and it will ſerve as good manure. Some planters let the pods, in which the Chocolate is incloſed, lie and rot in a heap (after they have taken the nuts out) which they alſo ſpread on the ground inſtead of dung. Either of theſe manures are very good, provided they are well rotted before they are laid on the ground; and great care ſhould be had, that no vermin ſhould be carried on the plantation with the dung.

Beſides the ordinary care of digging, hoeing, and manuring the plantations of Chocolate-trees, there is alſo another thing requiſite in order to their doing well; which is, to prune the decayed branches off, and to take away ſmall ill placed branches, wherever they are produced. But you ſhould be cautious how this work is performed; for there ſhould be no vigorous branches ſhortened, nor any large amputations made on theſe trees; becauſe they abound with a ſoft, glutinous, milky juice, which will flow out for many days whenever they are wounded, which greatly weakens the trees. However, ſuch branches whoſe extreme parts are decayed, ſhould be cut off, to prevent the infection from proceeding farther; and ſuch branches as are much decayed, ſhould be taken off cloſe to the ſtem of the tree; but this ſhould be performed in dry weather, ſoon after the crop of fruit is gathered.

Some people may perhaps imagine, that what I have directed, is a tedious laborious work, and not to be performed by a few ſlaves: but this is a great miſtake, for I have been credibly informed, that five or ſix negroes will cultivate a plantation of ten thouſand of theſe trees, provided they are properly inſtructed; which is a ſmall number, when compared to the quantity neceſſary to cultivate a Sugar plantation of the like extent of ground. And when the profits of both are compared, there will be a great difference: for, ſuppoſing we ſet the price of five ſhillings per annum, for the produce of each tree, when grown, (which I am of opinion is very moderate, conſidering what has been related;) then a plantation of ten thouſand trees will produce twenty-five hundred pounds a year; which, managed by ſix or ſeven negroes, without the expence of furnaces, &c. is a much greater profit than, I think, can be drawn from any other production.

In order to cultivate this plant in Europe, by way of curioſity, it will be neceſſary to have the nuts planted into boxes of earth (in the countries where they grow) ſoon after they are ripe; becauſe, if the nuts are ſent over, they will loſe their growing quality before they arrive. Theſe boxes ſhould be placed in a ſhady ſituation, and muſt be frequently watered, in order to forward the vegetation of the nuts. In about a fortnight after the nuts are planted, the plants will begin to appear above ground; when they ſhould be carefully watered in dry weather, and protected from the violent heat of the ſun, which is very injurious to theſe plants, eſpecially while they are young: they ſhould alſo be kept very clear from weeds; which, if ſuffered to grow in the boxes, will ſoon overbear the plants and deſtroy them. When the plants are grown ſtrong enough to tranſport, they ſhould be ſhipped and placed where they may be ſcreened from ſtrong winds, ſalt water, and the violent heat of the ſun. During their paſſage they muſt be frequently refreſhed with water; but it muſt not be given them in great quantities, leſt it rot the tender fibres of their roots, which will deſtroy the plants; and when they come into a cool latitude, they muſt be carefully protected from the cold, when they will not require ſo frequently to be watered: for in a moderate degree of heat, if they have gentle waterings once a week, it will be ſufficient.

When the plants arrive in England, they ſhould be carefully taken out of the boxes, and each tranſplanted into a ſeparate pot filled with light rich earth, and plunged into a moderate hot-bed of tanners bark, being careful to cover the glaſſes in the heat of the day, to ſcreen the plants from the ſun: they muſt alſo be frequently watered, but it muſt be done with caution, not to rot their roots. In this hot-bed the plants may remain till Michaelmas, when they muſt be removed into the bark-ſtove, and plunged into the tan, in the warmeſt part of the ſtove. During the winter ſeaſon the plants muſt be frequently refreſhed with water, but it muſt be given to them in ſmall quantities, yet in ſummer they will require a more plentiful ſhare. Theſe plants are too tender to live in the open air in this country, even in the hotteſt ſeaſon of the year; therefore muſt conſtantly remain in the bark-ſtove, obſerving in very warm weather to let in a large ſhare of freſh air to them, and in winter to keep them very warm. As the plants increaſe in bulk, they ſhould be ſhifted into larger pots; in doing of which, there muſt be particular care taken not to tear or bruiſe their roots, which often kills the plants; nor muſt they be placed in pots too large, becauſe that is a ſlow, but ſure death to them. The leaves of theſe plants muſt be frequently waſhed to clear them from filth, which they are ſubject to contract by remaining conſtantly in the houſe; and this becomes an harbour for ſmall inſects, which will infeſt the plants, and deſtroy them, if they are not timely waſhed off. If theſe rules are duly obſerved, the plants will thrive very well, and may produce flowers in this climate: but it will be very difficult to obtain fruit from them; for, being of a very tender nature, they are ſubject to many accidents in a cold country.

CACHRYS. Lin. Gen. Plant. 304.

The CHARACTERS are,

It hath an umbellated flower, the great or general umbel being compoſed of many ſmaller; the involucrum of both is compoſed of many narrow ſpear-ſhaped leaves; the great umbel is uniform. The flower hath five ſpear-ſhaped, erect, equal petals. It hath five ſingle ſtamina the length of the petals, terminated by ſingle ſummits. The turbinated germen is ſituated under the receptacle, ſupporting two ſtyles, crowned by roundiſh ſtigma. The empalement afterward becomes a large, oval, blunt fruit, dividing in two parts, each having one large fungous ſeed, convex on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. CACHRYS (*Trifidus*) foliis bipinatis, foliolis linearibus trifidis, ſeminibus lævibus. *Cachrys with bipinnated leaves, whoſe lobes are linear, and a ſmooth fruit.* Cachrys ſemine fungoſo lævi, foliis ferulaceis. Mor. Umb. 62.
2. CACHRYS (*Sicula*) foliis bipinnatis, foliolis linearibus acutis, ſeminibus ſulcatis hiſpidis. Lin. Sp. 355. *Ca-*

chrys with double winged leaves, whoſe lobes are linear, acute, and prickly furrowed ſeeds. Cachrys ſemine fungoſo ſulcato aſpero, foliis peucedani latiuſculis. Mor. Hiſt. 3. p. 267.

3. Cachrys (*Libanotis*) foliis bipinnatis, foliolis acutis multifidis, ſeminibus ſulcatis lævibus. Lin. Sp. 355. *Cachrys with double winged leaves, whoſe lobes are acute, multifid, and ſmooth furrowed ſeeds.* Cachrys ſemine fungoſo ſulcato plano minore, foliis peucedani anguſtis. Mor. Hiſt. 3. p. 267.
4. Cachrys (*Linearia*) foliis pinnatis foliolis linearibus multifidis ſeminibus ſulcatis planis. *Cachrys with very narrow, multifid, winged leaves, aud a plain channelled fruit.* Cachrys ſemine fungoſo ſulcato plano majore foliis peucedani anguſtis. Mor. Umb. 62.
5. Cachrys (*Hungarica*) foliorum impari lobato, hirſuto, ſemine fungoſo ſulcato plano. *Cachrys with hairy leaves, terminated with an odd lobe, and a plain, fungous, channelled ſeed.* Cachrys Hungarica Panacis folio. Tourn. Hiſt. 325.

The firſt ſort hath a thick fleſhy root which ſtrikes deep in the ground, from which ſprings out many narrow winged leaves reſembling thoſe of Giant-fennel, which ſpread near the ground; from between theſe ariſe a hollow fungous ſtalk about two feet high, terminated by a large umbel of yellow flowers, which are ſucceeded by oval, ſmooth, fungous fruit, dividing into two parts, each incloſing an oblong ſeed.

The ſecond ſort hath a large, firm, ſweet-ſmelling root, which ſends out ſeveral pinnated leaves like thoſe of Hog's-fennel, but ſhorter. The ſtalk is ſmooth jointed, and riſes four or five feet high, which is terminated by large umbels of yellow flowers like thoſe of Dill; theſe are ſucceeded by oblong, fungous, channelled ſeeds, which are prickly.

The third ſort hath a thick fleſhy root like Fennel, which runs deep into the ground, ſending out ſeveral narrow pinnated leaves, ending in many points; between theſe ariſe a ſmooth jointed ſtalk about three feet high, which is terminated by large umbels of flowers like thoſe of the former ſort, which are ſucceeded by ſmaller fungous plain ſeeds which are furrowed.

The fourth ſort hath very thick roots which ſtrike deep in the ground, ſending out very narrow winged leaves like thoſe of Hog's-fennel. The ſtalk riſes five or ſix feet high, and is jointed like thoſe of Fennel, terminated by large umbels of yellow flowers, which are ſucceeded by large, oval, fungous ſeeds, which are deeply furrowed.

The fifth ſort has a thick fungous root, from which ſhoot out many winged leaves, having large hairy lobes placed alternate, terminated by an odd one: the ſtalk is hollow, riſing four feet high, terminated by an umbel of yellow flowers like thoſe of the former ſorts. This grows naturally in Hungary.

The firſt ſort grows naturally in the ſouth of France and Spain; the ſecond and third in Italy; the fourth in Sicily. They flower in June, and their ſeeds ripen in autumn.

Theſe plants are all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till the following ſpring, they often miſcarry, and when they ſucceed, they never come up until the ſpring after; ſo that by ſowing them in autumn, a whole year is ſaved, and the ſeeds ſeldom miſcarry. Theſe ſeeds ſhould be ſown on a ſhady border, where the plants are to remain; for the plants having long tap roots, will not bear tranſplanting ſo well as many other kinds. The diſtance to be obſerved for the ſowing of their ſeeds ſhould be three feet apart; ſo that if each kind is ſown in a drill, when the plants are come up, they may be thinned, leaving two of the moſt promiſing plants of each kind to remain. Theſe plants will begin to appear early in April, when they muſt be carefully cleared from weeds; and in dry weather, if they are gently watered while young, it will greatly promote their growth; after which time they will require no farther care but to keep them clean from weeds, and every ſpring to dig the ground carefully between them, ſo as not to injure the roots.

Theſe plants decay to the ground every autumn, and come up again in the ſpring: they commonly flower in the beginning of June, and their ſeeds are ripe in September. Their roots ſometimes run down three or four feet deep in the earth, provided the ſoil be light, and are often as large as Parſneps. They will continue many years, and if the ſoil is moiſt and rich, they will annually produce good ſeeds; but when they grow on a dry ſoil, the flowers commonly fall away, and are not ſucceeded by ſeeds.

There is but little to be ſaid of the uſes of this genus of plants; the Hungarians in the neighbourhood of Erlaw, and thoſe who border on Tranſylvania, Servia, &c. eat the root of the fifth ſpecies in a ſcarcity of corn, for want of other bread.

CACTUS. Lin. Gen. Plant. 539. Melocactus. Tourn. Append.

This genus was firſt titled Melocarduus, and alſo Echinomelocactus, or Hedgehog Melon-thiſtle; but theſe names being compounded, Dr. Linnæus has changed the name to Cactus, and has added to this genus, the Cereus and Opuntia.

The Characters are,

The empalement of the flower is of one leaf, tubulous, ſhort, and cut into ſix parts. The flower is compoſed of ſix petals, which ſpread open at the top, and reſts upon the embryo; it hath ſix long ſlender ſtamina, which are terminated by erect ſummits. The oval germen, which is ſituated below the petals, ſupports a cylindrical ſtyle, crowned by a blunt ſtigma; afterward becomes a pyramidal fleſhy fruit with one cell, filled with ſmall angular ſeeds ſurrounded with pulp.

This genus of plants is ranged in the firſt ſection of Linnæus's twelfth claſs, intitled Icoſandria Monogynia. This claſs includes thoſe plants whoſe flowers have from twelve to twenty ſtamina; which, with the corolla, are faſtened to the inner ſide of the empalement.

The Species are,

1. Cactus (*Melocactus*) ſubrotundus quatuordecem angularis. Hort. Cliff. 181. *Roundiſh Cactus with fourteen angles.* Melocactus Indiæ occidentalis. C. B. P. 384. *Commonly called Great Melon-thiſtle.*
2. Cactus (*Intortus*) ſubrotundus quinquedecem angularis, angulis in ſpiram intortis, ſpinis erectis. *Roundiſh Cactus or Melon-thiſtle, with fifteen angles ſpirally twiſted, and erect ſpines.* Melocactus purpureis ſtriis in ſpiram intortis. Plum. Cat.
3. Cactus (*Recurvus*) ſubrotundus quinquedecem angularis, ſpinis latis recurvis creberrimis. *Roundiſh Melon-thiſtle with fifteen angles, having broad recurved ſpines ſet very cloſe.*
4. Cactus (*Mamillaris*) ſubrotundus tectus tuberculis ovatis barbatis. Hort. Cliff. 181. *Roundiſh Cactus cloſely covered with bearded tubercles.* Melocactus Americana minor. Boerh. Ind. alt. 2. 84. *Smaller American Melon-thiſtle.*
6. Cactus (*Proliferus*) proliferus ſubrotundus, tectus tuberculis ovatis barbatis longis albidis. *Roundiſh prolific Cactus, with oval tubercles cloſely joined, having long white beards, commonly called Small Childing Melon-thiſtle.*

Theſe plants are natives of the Weſt-Indies, where there are more ſorts than are here enumerated, if perſons of ſkill were to examine thoſe iſlands. There have been about four of the large kinds brought to England, ſome of which have been crowned with a prickly brown cap, in form of one of thoſe fur caps, which are worn by the Turks; and others, which have been deſtitute of theſe caps, although the plants were full as large as thoſe which had them; therefore ſome perſons have ſuppoſed them to be diſtinct ſpecies, eſpecially ſince theſe have been many years preſerved in the gardens, and no appearance of any caps as yet have been produced; but as theſe have been rarely propagated by ſeeds, it is difficult to determine if they are eſſentially different. Thoſe which have theſe caps, produce their fruit in circles round the upper

upper part of the cap; whereas, the ſmaller ſorts produce their fruit from between the tubercles, round the middle of the plant: and in ſome figures of the larger ſorts of theſe plants, the fruit is repreſented as coming out near the crown of the plant; ſo that if a ſkilful botaniſt was to examine theſe plants in the places of their growth, there would probably be found a much greater variety of them than is at preſent known.

Theſe ſtrange plants commonly grow upon the ſteep ſides of rocks in the warmeſt parts of America, where they ſeem to be thruſt out of the apertures, having little or no earth to ſupport them; their roots ſhooting down into the fiſſures of the rock to a conſiderable depth, ſo that it is troubleſome to get the plants up, eſpecially as they are ſo ſtrongly armed with thorns as to render it very dangerous to handle them; and as theſe plants delight in thoſe rocky places, they ſeldom live long when they are tranſplanted into better ſoil by the inhabitants of thoſe iſlands.

The great ſorts were ſome years ſince brought over to England in much greater plenty than of late; but then the greateſt part of them were deſtroyed, by the unſkilfulneſs of thoſe perſons who had the care of them in the voyage; for, by giving them water, they generally cauſed them to rot before they were taken out of the ſhips; and ſome of thoſe which have appeared to be ſound, have been ſo replete with moiſture, as to rot ſoon after they have been placed in the ſtoves; therefore whoever propoſes to bring theſe plants from abroad, ſhould be very careful to take up their roots as entire as poſſible, and to plant them in tubs filled with ſtones and rubbiſh, mixing very little earth with it, and to plant three or four plants in each tub, in proportion to their ſizes; for if they are placed cloſe together, it will ſave room; and as they do not increaſe their growth during their paſſage, there need not be any room allowed them for that purpoſe. There ſhould be ſeveral pretty large holes bored thro' the bottom of theſe tubs, to let the moiſture paſs off; and if theſe plants are planted in the tubs a month before they are put on board the ſhip, they will in that time have made new roots, which will be the moſt ſecure method to have them ſucceed; but, during their continuance in the country, they ſhould have no water given them, and after they are put on board the ſhip, they muſt not have any moiſture whatever; therefore it will be a good method to cover the plants with tarpaulin, to keep off the ſpray of the ſea in bad weather, and expoſe them at all times to the open air when the ſea is calm. By obſerving theſe directions, the plants may be brought to England in good health, provided they are brought in ſummer.

Some of the large ſort which have been brought to England, have been more than a yard in circumference, and two feet and a half high, including their caps; but I have been informed by ſeveral perſons who have reſided in the Weſt-Indies, that there are plants near twice as large.

The third ſort was brought into England by the late Dr. William Houſtoun, who procured the plants from Mexico; but as they were long in their paſſage, and had received wet, they were decayed before they arrived in England; but from the remains of them which were left, they appeared to be the moſt ſingular of all the ſpecies yet known. This has two orders of thorns; one of which are ſtrait, and ſet on at the joints in cluſters, ſpreading out from the center each way like a ſtar; and in the middle of each cluſter is produced one broad flat thorn near two inches in length, which ſtands erect, and is recurved at the point, and is of a browniſh red colour. Theſe thorns are, by the inhabitants of Mexico, ſet in gold or ſilver, and made uſe of for picking their teeth, and the plant is by them called Viſnaga, i. e. tooth-pick.

The ſort with ſpiral ribs, as alſo that with white ſpines, I received from Antigua, with the common ſort; but whether theſe are only accidental varieties, ariſing from the ſame ſeeds, or real different ſpecies, I cannot take upon me to determine; ſince, in this country, they are very rarely propagated by ſeeds; nor could I obſerve, in the ſeveral years that I have had theſe plants under my care, there was the leaſt diſpoſition in either of them to produce fruit; when, at the ſame time, the common large ſort produced plenty of fruit out of their caps every year, from the ſeeds of which I have raiſed ſome young plants; but although ſome of theſe have grown to a conſiderable ſize, yet none of them have as yet produced caps, therefore no fruit can be yet expected from them.

The fifth ſort produces quantities of fruit annually; and as the ſeeds grow very readily, it is now very common in thoſe gardens where there are ſtoves to keep them; for if the fruit is permitted to drop upon the earth of the pots, and that is not diſturbed, there will plenty of plants come up without any farther trouble; and theſe ſeedling plants may be taken up as ſoon as they are of a proper ſize to remove, and planted ſix or ſeven of them into a ſmall halfpenny pot, where they may ſtand one year; by which time they will be large enough to be each planted into a ſeparate pot, and afterward they will make great progreſs, eſpecially if they are plunged into a hot-bed of tanners bark in ſummer; for although this ſort is much more hardy than the large kind, and may be preſerved in a moderate ſtove, yet the plants will not make near the progreſs as thoſe which are kept in a greater degree of heat. This ſort will continue many years with proper care, and the plants will grow to be a foot high or more; but when they are ſo tall, the lower part of them is not ſo ſightly, their green being decayed, and the ſpines changed to a dark dirty colour, they appear as if dead, ſo that the upper part of theſe old plants only ſeem to have life; whereas the plants of the middling ſize appear healthy from top to bottom. The flowers of this ſort appear in July and Auguſt, and are ſucceeded by the fruit quite round the plant, which are of a fine ſcarlet colour, and continue freſh upon the plants through the winter, which renders them very beautiful at that ſeaſon. And in the ſpring, when the fruit ſhrivels and becomes dry, the ſeeds will be ripe, and may then be rubbed out, and ſown upon the ſurface of the earth in ſmall pots, which ſhould be plunged into a hot-bed of tanners bark to bring up the plants.

The ſixth ſort is but little larger than the fifth, growing nearly in the ſame form; but this produces a great number of young plants from the ſides, by which it is increaſed. This ſort produces tufts of a ſoft white down upon the knobs, and alſo between them at every joint, which makes the whole plant appear as if it was covered with fine cotton. The flowers of this ſort are produced from between the knobs round the ſides of the plants, which are in ſhape and colour very much like thoſe of the fifth ſort, but larger. Theſe flowers are not ſucceeded by any fruit, at leaſt all thoſe which I have under my care, have not produced any, although they have produced plenty of flowers for ſome years; but from the ſame places where the flowers have appeared, there have been young plants thruſt out the following ſeaſon. Theſe young plants I have taken off, and after laying them to dry for two or three days, I have planted them, and they have ſucceeded very well.

All the ſpecies of this genus are plants of a ſingular ſtructure, but eſpecially the larger kinds of them, which appear like a large fleſhy green Melon, with deep ribs, ſet all over with ſtrong ſharp thorns; and when the plants are cut through the middle, their inſide is nothing but a ſoft, green, fleſhy ſubſtance, very full of moiſture. And I have been aſſured by perſons of credit, who have lived in the Weſt-Indies, that in times of great drought, the cattle repair to the barren rocks, which are covered with theſe plants, and after having ripped up the large plants with their horns, ſo as to tear off the outſide ſkin with the thorns, they have greedily devoured all the fleſhy moiſt parts of the plants, which has afforded them both meat

and

and drink; but how any animal ſhould ever attack plants which are ſo well defended by ſtrong thorns, which are as hard and ſtiff as whalebone, or any other bony ſubſtance, is difficult to conceive; nor could any thing but diſtreſs for moiſture ever have tempted them to venture amongſt theſe troubleſome plants to ſearch for relief, ſince they muſt encounter with many difficulties, before they could find a method of diſlodging the thorns.

The fruit of all the ſorts of Melon-thiſtles, are frequently eaten by the inhabitants of the Weſt-Indies; there is ſcarce any difference in the fruits of all the kinds I have yet ſeen, either in ſize, ſhape, colour, or taſte. They are about three quarters of an inch in length, of a taper form, drawing to a point at the bottom toward the plant, but blunt at the top, where the empalement of the flower was ſituated. The taſte is an agreeable acid, which, in a hot country, muſt render the fruit more grateful.

All the ſorts of theſe plants require a very good ſtove to preſerve them through the winter in England, nor ſhould they be expoſed to the open air in ſummer; for although they may continue fair to outward appearance, when they have been ſome time expoſed abroad, yet they will imbibe moiſture, which will cauſe them to rot ſoon after they are removed into the ſtove. And this is frequently the caſe of thoſe plants which are brought from abroad, which have a fair healthy appearance many times at their firſt arrival, but ſoon after decay, and this will happen very ſuddenly. Scarce any appearance of diſorder will be ſeen, till the whole plant is killed; which, in a few hours time, has often been the fate of thoſe plants, when they have been placed in the ſtove.

If theſe plants are plunged into a hot-bed of tanners bark in ſummer, it will greatly forward them in their growth; but when this is practiſed, there ſhould be ſcarce any water given to the plants, for the moiſture which they will imbibe from the fermentation of the tan, will be ſufficient for them, and more would cauſe them to rot. The beſt method to preſerve all the large kinds is, in winter, to place the pots, either upon the tops of the flues, or, at leaſt, very near them, that they may have the warmeſt place of the ſtove; and during that ſeaſon, never to give them any water; but when the ſeaſon comes for leaving out the fire in the ſtove, to remove them into a bed of tanners bark, which will ſoon ſet them in a growing ſtate, and recover their verdure. The ſoil in which theſe ſhould be planted, muſt be of a ſandy nature, and if mixed with ſome dry lime rubbiſh, it will be ſtill better. In the bottom of the pots ſhould be placed ſome ſtones, in order to drain off any moiſture which may be in the earth; for as theſe plants naturally grow upon the hot dry burning rocks which have no earth, and, were it not for theſe plants, would be abſolutely barren, we muſt imitate their natural ſoil as near as poſſible, making ſome allowance for the difference of climates.

The great ſorts may be propagated by ſeeds, which muſt be ſown and managed as hath been directed for the ſmaller ſort; but as the plants which are raiſed from ſeeds in England, will be ſome years in arriving to any conſiderable ſize, it will be much the beſt way to procure ſome plants from the Weſt-Indies; and if the plants arrive here in any of the ſummer months, ſo as that there may be time for them to get new root before the cold comes on in autumn, the plants will more certainly ſucceed. When the plants come over, it will be proper to take them out of the earth as ſoon as poſſible, and lay them in the ſtove upon the ſhelves, to dry for a fortnight or three weeks; and when they are planted, they ſhould be plunged into a good warm bed of tanners bark, to promote their making new roots. In this bed they may remain till the beginning of October, when they muſt be removed into the ſtove, and treated in the manner before directed.

The two ſmall ſorts propagate ſo faſt in England, as to render it unneceſſary to ſend for plants of theſe kinds from abroad; for whoever hath a mind to be

plentifully ſtocked with them, may be ſoon ſupplied with the fifth ſort from ſeeds, and the ſixth from the young plants which are thruſt out from the ſide of the old.

CÆSALPINA. Plum. Nov. Gen. 9. Braſiletto.

This plant was ſo named by father Plumier, who diſcovered it in America, in honour of Andreas Cæſalpinus, an eminent botaniſt, and one of the firſt writers on a method of claſſing plants.

The CHARACTERS are,

It hath a quinquefid pitcher-ſhaped empalement, the under lobe being large. The flower hath five almoſt equal petals, of the butterfly kind. It hath ten declining ſtamina which are diſtinct, and terminated by roundiſh ſummits, and an oblong germen ſupporting a ſingle ſtyle the length of the ſtamina, crowned by a blunt ſtigma. The empalement afterward becomes an oblong compreſſed pod, with one cell incloſing three or four compreſſed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flower having ten ſeparate ſtamina and one ſtyle.

The SPECIES are,

1. CÆSALPINA (*Braſilienſis*) foliis duplicato-pinnatis, foliolis emarginatis, floribus decandris. *Cæſalpina with doubly winged leaves, whoſe ſmall leaves are indented at the end, and flowers with ten ſtamina.* Pſeudo-ſantalum croceum. Sloan. Hiſt. Jam. Vol. II. p. 184. *Saffron-coloured Baſtard Saunders, commonly called Braſiletto.*
2. CÆSALPINA (*Ariſta*) foliis duplicato-pinnatis foliolis ovatis integerrimis floribus pentandriis. *Cæſalpina with doubly winged leaves, whoſe ſmall leaves are oval and entire, and flowers with five ſtamina.* Cæſalpina polyphylla aculis horrida. Plum. Nov. Gen. 28.

The firſt ſort is the tree which affords the Braſiletto wood, which is much uſed in dyeing. It grows naturally in the warmeſt parts of America, from whence the wood is imported for the dyers; and the demand for it has been ſo great, that there are no large trees left in any of the Britiſh colonies, the biggeſt ſcarce exceeding eight inches in diameter, and fifteen feet in height. It hath very ſlender branches, which are armed with recurved thorns. The leaves are winged, branching out into many diviſions, each being garniſhed with ſmall oval lobes which are indented at the top, and are placed oppoſite. The foot-ſtalks of the flowers come out from the ſide of the branches, and are terminated by a looſe pyramidal ſpike of white flowers, which are ſhaped ſomewhat like thoſe of the butterfly kind, having ten ſtamina which are much longer than the petals, and terminated by roundiſh yellow ſummits. The germen afterward becomes a long compreſſed pod with one cell, incloſing ſeveral oval flat ſeeds.

The ſecond ſort grows naturally in the ſame countries with the firſt, but is of larger ſize: it ſends out many weak irregular branches, armed with ſhort, ſtrong, upright thorns. The leaves branch out in the ſame manner as the firſt, but the lobes (or ſmall leaves) are oval and entire. The flowers are produced in long ſpikes like thoſe of the former, but are variegated with red; theſe have each but five ſtamina, therefore, according to Linnæus's ſyſtem, ſhould not be ranged in this claſs; but as in all the other characters they agree, I have continued them together.

Dr. Linnæus has joined theſe two ſpecies together, in which he has been followed by Dr. Burman; but if either of them had ſeen the plants, they could not have committed this miſtake. To this genus Linnæus has added two other ſpecies, one of which is a Guilandina, and the other a Bauhinia: to the latter he has added the Synonime of Colutea Veræ Crucis Veſicaria, which is a plant totally different, being a genuine Colutea. I received this from the late Dr. Houſtoun, who found it growing naturally at La Vera Cruz, in New Spain.

Theſe plants are propagated by ſeeds, which ſhould be ſown in ſmall pots filled with light rich earth early in the ſpring, and plunged into a hot-bed of tanners bark, obſerving to water the earth as often as it ap-

pears dry, in order to promote the vegetation of the ſeeds; and if the nights ſhould prove cold, the glaſſes of the hot-bed ſhould be covered with mats, to keep the bed in a moderate warmth. In about ſix weeks after, the plants will begin to appear, when they muſt be carefully cleared from weeds, and frequently refreſhed with water; and, in warm weather, the glaſſes of the hot-bed ſhould be raiſed in the middle of the day, to admit freſh air to the plants, which will greatly ſtrengthen them, otherwiſe they are apt to draw up weak. When the plants are about three inches high, they ſhould be carefully taken out of the pots, and each tranſplanted into a ſeparate ſmall pot filled with freſh light earth, and plunged into the hot-bed again, obſerving to water them, and ſcreen them from the heat of the ſun until they have taken new root; after which time, the glaſſes of the hot-bed ſhould be raiſed every day, in proportion to the heat of the weather, to admit freſh air to the plants. In this hot-bed the plants may remain till autumn, when they ſhould be removed into the ſtove, and plunged into the bark-bed, where they may have room to grow. Theſe plants being tender, ſhould always be kept in the bark-ſtove, and have a moderate ſhare of heat in the winter, and being placed among other tender exotic plants of the ſame country, will afford an agreeable variety.

CAINITO. See CHRYSOPHYLLUM.

CAKILE, Sea Rocket. See BUNIAS.

CALABA, Indian Maſtich-tree. See CORNUS.

CALAMINTHA. See MELISSA.

CALCEOLUS, Ladies Slipper. See CYPRIPEDIUM.

CALCITRAPA. See CENTAUREA.

CALEA.

The CHARACTERS are,

It hath a uniform compound flower, compoſed of many equal hermaphrodite florets, included in a looſe imbricated empalement; the florets are tubulous, divided into five ſegments; they have each five ſtamina with cylindrical ſummits, and an oblong germen, with a ſlender ſtyle the length of the corolla, crowned by two recurved ſtigma. The florets are ſucceeded by an oblong ſeed, crowned with a hairy down, having a chaffy ſubſtance between each ſeed.

This genus of plants is ranged in the firſt order of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis, the flowers being compoſed of hermaphrodite flowers.

The SPECIES are,

1. CALEA (*Oppoſitifolia*) corymbus congeſtis, pedunculis longiſſimis, foliis lanceolatis, caule herbaceo. Amœn. Acad. 5. p. 404. *Calea with a cloſe corymbus, very long foot-ſtalks to the flowers, ſpear-ſhaped leaves, and an herbaceous ſtalk.* Santolina Americana foliis oblongis integris, floribus albis. Houſt. MSS.
2. CALEA (*Amellus*) floribus ſubpaniculatis, calycibus brevibus, ſeminibus nudis, foliis ovato-lanceolatis petiolatis. Amœn. Acad. 5. p. 404. *Calea with flowers in panicles, ſhort empalements, naked ſeeds, and oval ſpear-ſhaped leaves on foot-ſtalks.* Santolina ſcandens Americana Lauri foliis, floribus racemoſis. Houſt. MSS.

Theſe plants grow naturally in Jamaica. The firſt hath an upright herbaceous ſtalk three feet high, garniſhed with entire ſpear-ſhaped leaves, placed oppoſite at the joints; the ſtalk is terminated by three foot-ſtalks, one in the middle, and one on each ſide, ſupporting a ſmall corymbus of white flowers cloſely joined together.

The ſecond ſort hath ligneous branches, which ſpread over the neighbouring plants, and riſe eight or ten feet high, garniſhed with thick ſpear-ſhaped leaves placed oppoſite; from theſe ſtalks are put out many ſide branches, garniſhed with ſmaller leaves placed oppoſite, and terminated by panicles of yellow flowers, having ſhort empalements: theſe are ſucceeded by naked ſeeds incloſed in the flower-cup.

Theſe plants are both propagated by ſeeds, which ſhould be ſown upon a hot-bed early in the ſpring; when the plants come up, they ſhould be tenderly treated while young, admitting freſh air to them daily in proportion to the warmth of the ſeaſon, giving them water frequently, but ſparingly; when they have obtained ſtrength enough to be removed, thoſe of the firſt ſort ſhould be tranſplanted into another hot-bed, allowing them four inches diſtance. The plants of the ſecond ſort ſhould be put into ſmall pots plunged into the tan-bed, obſerving to ſhade them until they have taken new root; after which they ſhould be treated in the ſame manner as other tender exotic plants, watering them frequently in warm weather, and admitting freſh air to them daily. When the plants of the firſt ſort have grown ſo ſtrong as to meet, they ſhould be carefully planted in pots, and removed either into the ſtove or glaſs-caſe, where they may remain to ripen ſeeds, after which they ſoon die. The plants of the ſecond ſort will live many years if they are preſerved in the bark-ſtove, but they are too tender to thrive in the open air in this country; however, they ſhould have plenty of freſh air admitted to them in ſummer when the weather is warm.

CALENDULA. Lin. Gen. Plant. 885. Marigold.

The CHARACTERS are,

It hath a compound radiated flower, conſiſting of hermaphrodite and female florets, included in a common ſingle empalement, the border or rays being compoſed of female florets, which are ſtretched out on one ſide like a tongue; theſe have no ſtamina, but an oblong three-cornered germen, ſupporting a ſlender ſtyle, crowned by two reflexed ſtigma. The hermaphrodite florets, which compoſe the diſk, are tubulous and quinquefid, having five ſhort ſlender ſtamina, terminated by cylindrical ſummits. The germen is ſituated under the petal, ſupporting a ſlender ſtyle, crowned by an obtuſe bifid ſtigma. Theſe florets are barren, but the female florets are each ſucceeded by one oblong incurved ſeed, with angular membranes.

This genus of plants is ranged in the fourth ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia neceſſaria; in which are included all thoſe plants which have hermaphrodite barren flowers in the diſk, and fruitful female flowers in the border.

The SPECIES are,

1. CALENDULA (*Arvenſis*) ſeminibus cymbiformibus muricatis incurvatis. Flor. Suec. 711. *Marigold with rough boat-ſhaped ſeeds.* Caltha arvenſis. C. B. P. 275.
2. CALENDULA (*Sancta*) ſeminibus urceolatis obovatis lævibus, calycibus ſubmuricatis. Lin. Sp. 1304. *Marigold with ſmooth pitcher-ſhaped leaves, and a rough empalement.* Caltha media folio longo cinereo, flore pallido. Bobart. *Middle Marigold with a long Aſh-coloured leaf, and a pale flower.*
3. CALENDULA (*Officinalis*) ſeminibus cymbiformibus muricatis, incurvatis omnibus. Lin. Sp. 1304. *Marigold with boat-ſhaped, prickly, incurved ſeeds.* Caltha vulgaris. C. B. P. 275. *Common Marigold.*
4. CALENDULA (*Pluvialis*) foliis lanceolatis ſinuato-denticulatis caule folioſo, pedunculis filiformibus. Hort. Upſal. 274. *Marigold with ſpear-ſhaped indented leaves, and ſlender foot-ſtalks.* Caltha Africana flore intus albo extus violaceo. Tourn. Inſt. R. H. 499.
5. CALENDUDA (*Nudicaulis*) foliis lanceolatis ſinuato-dentatis caule ſubnudo. Lin. Sp. Plant. 922. *Marigold with ſinuated, indented, ſpear-ſhaped leaves, and a naked ſtalk.* Caltha Africana flore intus albo, extus leviter violaceo, ſemine plano cordato. Boerh. Ind. alt. 1. p. 113.
6. CALENDULA (*Hybrida*) foliis lanceolatis dentatis caule folioſo, pedunculis ſupernè incraſſatis. Hort. Upſal. 274. *Marigold with indented ſpear-ſhaped leaves, and the upper part of the foot-ſtalk ſwelling.* Cardiſpermum Africanum pubeſcens foliis inciſis parvo flore. Vaill. Mem. Acad. Sc. 1724.
7. CALENDULA (*Graminifolia*) foliis linearibus ſubintegerrimis caule ſubnudo. Lin. Sp. Plant. 922. *Marigold with narrow entire leaves, and a naked ſtalk.* Caltha Africana foliis Croci anguſtis, florum petalis externè purpuraſcentibus, internè albis. Boerh. Ind. alt. 1. p. 113.

8. Calendula (*Fruticoſa*) foliis obovatis ſubdentatis, caule fruticoſo. Amœn. Acad. 5. p. 25. *Marigold with obverſe, oval, indented leaves, and a ſhrubby ſtalk.*
9. Calendula (*Decumbens*) foliis oppoſitis pinnatifidis aſperis, ſubtus incanis, ramis decumbentis, pedunculis nudis. *Marigold with rough pinnatifid leaves growing oppoſite, which are white on their under ſide, trailing branches, and naked foot-ſtalks.* Caltha Americana foliis laciniatis flore luteo. Houſt. MSS.
10. Calendula (*Americana*) caule erecto ramoſo, foliis oblongis oppoſitis hirſutis, floribus lateralibus. *Marigold with an upright branching ſtalk, oblong hairy leaves growing oppoſite, and flowers proceeding from the ſides of the ſtalk.* Caltha Americana erecta, & hirſuta, flore parvo ochroleuco. Houſt. MSS.

The firſt ſort grows naturally in the ſouth of France, Spain, and Italy; it riſes with a ſlender branching ſtalk, which ſpreads near the ground, and is garniſhed with narrow, ſpear-ſhaped, hairy leaves, which half ſurround the ſtalk at their baſe; the flowers are produced at the extremity of the branches upon long naked foot-ſtalks. They are very ſmall, and of a pale yellow colour; the rays are very narrow, as are alſo the leaves of the empalement. The ſeeds are long, narrow, and on their outſide armed with prickles. The root is annual, and periſhes ſoon after the ſeeds are ripe. If the ſeeds of this plant are permitted to ſcatter, there will be a freſh ſupply of young plants: ſo that from May, when the flowers firſt appear, till the froſt puts a ſtop to them, there will be a ſucceſſion of plants in flower. There are ſeveral botaniſts who ſuppoſe the common Marigold, which is cultivated in gardens, to be only a variety of this, ariſing from culture; but I have cultivated this in the garden more than forty years, without finding the leaſt alteration in it, therefore cannot doubt of its being a diſtinct ſpecies.

The ſecond ſort I gathered in the garden at Leyden, where it had been ſeveral years cultivated without altering; the leaves of this ſort are ſmooth, and much larger than thoſe of the former, but not ſo large as thoſe of the common Marigold; the flowers are alſo of a middle ſize between them, and are of a very pale yellow colour. This is alſo an annual plant. If the ſeeds are permitted to ſcatter, there will be a conſtant ſupply of young plants come up.

The third ſort is the common Marigold, which is cultivated for uſe in the gardens; this is ſo well known, as to require no deſcription. Of this there are the following varieties; the common ſingle; the double flowering; the largeſt very double flower; the double Lemon-coloured flower; the greater and ſmaller childing Marigold.

Theſe varieties are ſuppoſed to have been originally obtained from the ſeeds of the common Marigold, but moſt of theſe differences continue, if the ſeeds are properly ſaved; nor have I ever obſerved the common ſort approaching to either of theſe, where they have been long cultivated in the greateſt plenty; but as the two childing Marigolds, and the largeſt double, are ſubject to degenerate, where care is not taken in ſaving their ſeeds, I conclude they are not diſtinct ſpecies. The beſt way to preſerve theſe varieties, is to pull up all thoſe plants, whoſe flowers are leſs double, as ſoon as they appear, that they may not impregnate the others with their farina, and ſave the ſeeds from the largeſt and moſt double flowers; and the childing ſort ſhould be ſown by itſelf in a ſeparate part of the garden, and the ſeeds ſaved from the large center flowers only, not from the ſmall ones which come from the empalement of the other, for the ſeeds of theſe are apt to change.

The ſeeds of theſe may be ſown in March or April, where the plants are to remain, and will require no other culture but to keep them clean from weeds, and to thin the plants where they are too cloſe, leaving them ten inches aſunder, that their branches may have room to ſpread. Theſe plants will begin to flower in June, and continue in flower until the froſt kills them. The ſeeds ripen in Auguſt and September, which, if permitted to ſcatter, will furniſh a ſupply of young plants in the ſpring; but as theſe will be a mixture of bad and good, the beſt method is to ſave the beſt ſeeds, and ſow each of the varieties diſtinct, which is the ſure way to have them in perfection. The flowers of the common Marigold are uſed in the kitchen.

The fourth ſort grows naturally at the Cape of Good Hope. This plant is annual, and periſhes ſoon after the ſeeds are perfected.

The lower leaves are oblong, ſpear-ſhaped, and deeply indented on their edges; they are fleſhy, and of a pale green colour. The ſtalks are produced on every ſide the root, which decline toward the ground, and are from ſix to eight inches long, garniſhed with leaves from the bottom, to within two inches of the top. The leaves on the ſtalks are much narrower, and more indented than thoſe at the root. The upper part of the ſtalk is very ſlender, upon which reſts one flower, ſhaped like thoſe of the common Marigold, having a purple bottom; and the rays (or border) of the flower are of a Violet-colour on their outſide, and of a pure white within; theſe open when the ſun ſhines, but ſhut up in the evening, and remain ſo in cloudy weather. When the flower decays, the pedicle (or foot-ſtalk) becomes weak, and the head hangs down, during the formation and growth of the ſeeds; but when they are fully ripe, the foot-ſtalk raiſes itſelf again, and the heads of the ſeeds ſtand upright.

The fifth ſort is a native of the Cape of Good Hope. This is alſo an annual plant, and has much the appearance of the former, but the leaves are more deeply indented on their edges; the ſtalks grow about the ſame length as the former; the flower is a little ſmaller, and the outſide of the rays are of a fainter purple colour. The ſeeds of this are flat and heart-ſhaped, but thoſe of the former are long and narrow.

The ſixth ſort was brought from the ſame country with the two former, and is alſo an annual plant; the leaves of this are much longer than thoſe of either of the former ſorts, and broader at the end; they are regularly indented near the root, but thoſe on the ſtalks have but few and ſhallow indentures. The ſtalks of this ſort are much longer and thicker than thoſe of the former; and at the top, juſt below the flower, ſwell larger than at the bottom; the flower is ſmaller than thoſe of the other ſorts, but is of the ſame colour. Theſe plants flower in June, July, and Auguſt, and their ſeeds ripen about ſix weeks after; ſo that they muſt be gathered at different times as they come to maturity.

The ſeeds of theſe plants ſhould be ſown in the ſpring in the borders of the garden where the plants are deſigned to remain, for they do not bear tranſplanting well; therefore they may be treated in the ſame manner, and ſown at the ſame time, with Candy Tuft, Venus Looking Glaſs, and other hardy annual plants, putting four or five ſeeds in each patch; if they all grow, there ſhould not be more than two plants left in each patch: after this, they require no farther care but to keep them clean from weeds. If the ſeeds of theſe plants are permitted to ſcatter, the plants will come up the following ſpring without care, and theſe will flower earlier than thoſe which are ſown in the ſpring.

The ſeventh ſort is alſo a native of the ſame country. This is a perennial plant, which divides near the root into ſeveral tufted heads, which are cloſely covered with long graſſy leaves coming out on every ſide without order; ſome of theſe have one or two indentures on their edges, but the moſt part are entire. From between the leaves ariſe naked foot-ſtalks about nine inches long, ſuſtaining one flower at the top, which is about the ſize of the common Marigold, having a purple bottom; the rays are alſo purple without, but of a pure white within. Theſe expand when the ſun ſhines, but always cloſe in the evening, and in cloudy weather. The general ſeaſon of their

beauty

beauty is in April and May, when they have the greateſt number of flowers upon them; but there is commonly a ſucceſſion of flowers late in the autumn, though not in ſo great plenty. This ſort doth not often produce good ſeeds in Europe, but it is eaſily propagated by ſlips taken off from the heads, in the ſame manner as is practiſed for Thrift. They may be planted any time in ſummer, in pots filled with light freſh earth, which may be plunged into a very moderate hot-bed, to forward their putting out roots; or otherwiſe the pots may be ſunk in the ground up to their rims, and covered with a Melon-glaſs, which, in the middle of ſummer, will anſwer full as well, but in the ſpring or autumn, the former method is to be preferred: when theſe are planted, the glaſſes muſt be ſhaded in the heat of the day, and the ſlips muſt be frequently refreſhed with water, but it muſt not be given them too liberally, for much wet will rot them: after they have got ſtrong roots, they ſhould be each planted into ſeparate ſmall pots, filled with freſh light earth, and placed in a ſhady ſituation, till they have taken freſh root, when they may be placed in the open air, in a ſheltered ſituation, where they may remain till autumn, and then ſhould be placed in a dry, airy, glaſs-caſe, for the winter ſeaſon, or under a common hot-bed frame; for theſe plants do not thrive in artificial heat, they only require protection from froſt and wet, and ſhould enjoy the air at all times when the weather is mild. The ſeeds of this ſort are heart-ſhaped, like thoſe of the fifth. I have ſometimes had one or two heads of them ripen in a ſeaſon, but this is very rare; and if the ſeeds are not ſown in autumn, they ſeldom grow.

The eighth ſort has been of late years introduced into the Dutch gardens from the Cape of Good Hope. This was ſent me by Dr. Van Royen, profeſſor of botany at Leyden, ſome years paſt. It hath a ſlender, ſhrubby, perennial ſtalk, which riſes to the height of ſeven or eight feet, but requires ſupport; this ſends out a great number of weak branches, from the bottom to the top, which hang downward, unleſs they are ſupported; they are garniſhed with oval leaves, having ſhort flat foot-ſtalks; moſt of theſe are ſlightly indented toward the top, and many of them are entire; they are of a ſhining green colour on their upper ſide, but paler underneath; the flowers come out at the end of the branches, on ſhort naked foot-ſtalks, and are in ſize and colour like thoſe of the ſixth ſort; theſe are ſometimes ſucceeded by flat heart ſhaped ſeeds. The flowers appear during the ſummer months.

This is eaſily propagated by cuttings, which may be planted any time in ſummer in a ſhady border, or otherwiſe ſhaded with mats in the heat of the day: in five or ſix weeks, theſe will have taken root, when they ſhould be carefully taken up, and each put into a ſeparate pot, filled with light ſandy earth, but not dunged, and placed in the ſhade till they have taken freſh root; then they may be placed with other hardy exotic plants in a ſheltered ſituation where they may remain till the froſt begins, when they muſt be removed into the green-houſe, placing them near the windows that they may enjoy the free air, for this plant only requires protection from froſt. The earth in which theſe are planted, ſhould be light, but very poor, for in rich earth they grow too luxuriant, and ſeldom flower.

The ninth ſort was ſent me from La Vera Cruz, in New Spain, by the late Dr. Houſtoun, where he found it growing naturally in great plenty. This ſends out many herbaceous ſtalks from the root, which are hairy, and trail upon the ground. The leaves are placed by pairs oppoſite; theſe are long, narrow, and indented on their edges in two or three places oppoſite to each other, ſo as to appear like three, five, or ſeven lobes: they are rough, and of a deep green on their upper ſide, but hoary on their under, covered with ſlender hairs. From the diviſions of the branches and the wings of the leaves, come out long naked foot-ſtalks, terminated by ſingle yellow flowers, about the ſize of thoſe of the Field Daiſy; which are ſucceeded by long, flat, rough ſeeds. It grows naturally in poor ſandy ground, and flowers in the ſpring. This plant is annual; the ſeeds muſt be ſown in the ſpring upon a hot-bed, and when the plants are fit to remove, they ſhould be planted in pots filled with light ſandy earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them until they have taken new root; then they muſt have air admitted to them every day, in proportion to the warmth of the ſeaſon, and treated in the ſame manner as other tender plants from the ſame countries. With this management, the plants will flower in Auguſt, and the ſeeds ripen in October.

The tenth ſort riſes with an upright ſtalk about eight inches high, ſending out ſlender ſtiff branches on every ſide, thoſe near the ground being much longer than the upper; theſe are garniſhed with oblong hairy leaves without foot-ſtalks, placed oppoſite. From the wings of the ſtalk, ariſes the foot-ſtalk of the flower, having two ſmall leaves placed oppoſite, juſt below the flower, which hath a ſingle empalement, like the other ſpecies. The flowers are of a yellowiſh white colour. This ſort was ſent me with the former from La Vera Cruz, by the ſame gentleman. It is an annual plant, and requires the ſame treatment as the former ſort.

CALF's SNOUT. See ANTIRRHINUM.

CALLA. Lin. Gen. Plant. 917. Wake Robin, or Ethiopian Arum.

The CHARACTERS are,

It hath a large open ſpatha of one leaf, which is oval and heart-ſhaped, ending in a point, it is coloured and permanent, and a ſingle upright ſpadix, to which the flowers and fruit adhere. This hath male and female flowers, intermixed toward the upper part of the club (or ſpadix.) The male flowers conſiſt of many very ſhort ſtamina, terminated by ſmall yellowiſh ſummits; the female flowers have a compreſſed ſtyle, reſting upon an obtuſe germen, crowned by a pointed ſtigma. Theſe flowers, at their firſt appearance, have a ſhort green empalement which ſoon falls off, leaving the ſtyle naked. The germen afterward becomes a globular pulpy fruit, compreſſed on two ſides, incloſing two or three obtuſe ſeeds.

This genus of plants is ranged in the ſeventh ſection of Linnæus's twentieth claſs, intitled Gynandria Polyandria. This claſs includes thoſe plants whoſe male and female flowers are intermixed; and this ſection, thoſe whoſe male parts have many ſtamina.

The SPECIES are,

1. CALLA (*Æthiopica*) foliis ſagitato-cordatis, ſpathâ cucullatâ, ſpadice ſupernè maſculo. Hort. Cliff. 436. *Calla with arrow-headed heart-ſhaped leaves, a hooded ſpatha or ſheath, and male flowers ſituated on the upper part of the ſpadix.* Arum Africanum flore albo odorato. Par. Bat. Prod.
2. CALLA (*Paluſtris*) foliis cordatis, ſpathâ plana, ſpadice undique hermaphrodito. Hort. Cliff. 436. *Calla with heart-ſhaped leaves, a plain ſheath, and every part of the foot-ſtalk hath hermaphrodite flowers.* Dracunculus aquatilis. Dod. Pempt. 330.
3. CALLA (*Orientalis*) foliis ovatis. Gron. Orient. 282. *Calla with oval leaves.* Arum minus Orientale, rotundioribus foliis. Mor. Hiſt. 3. p. 544.

This plant hath thick, fleſhy, tuberous roots, which are covered with a thin brown ſkin, and ſtrike down many ſtrong fleſhy fibres into the ground. The leaves ariſe in cluſters, having foot-ſtalks more than a foot long, which are green and ſucculent. The leaves are ſhaped like the point of an arrow, they are eight or nine inches in length, and of a ſhining green, ending in a ſharp point, which turns backward; between the leaves ariſe the foot-ſtalk of the flower, which is thick, ſmooth, of the ſame colour as the leaves, and riſes above them, and is terminated by a ſingle flower, ſhaped like thoſe of the Arum; the hood or ſpatha being twiſted at the bottom, ſpreads open at the top, and is of a pure white colour. In the center of this is ſituated the ſpadix or club, which is of an herbaceous yellow colour, upon which the ſmall herbaceous

baceous flowers are placed, and ſo cloſely joined, as that the male and female parts are very difficult to diſtinguiſh, without the aſſiſtance of glaſſes. When theſe fade, part of thoſe which are ſituated at the top of the club, are ſucceeded by roundiſh fleſhy berries compreſſed on two ſides, each containing two or three ſeeds.

This plant grows naturally at the Cape of Good Hope, but has been long an inhabitant in the Engliſh gardens. It propagates very faſt by offsets, which ſhould be taken off the latter end of Auguſt, at which time the old leaves decay; but this plant is never deſtitute of leaves, for before the old ones decay, there are young leaves produced, which advance in height all the winter; but at this ſeaſon the roots are in their moſt inactive ſtate. Theſe roots have generally a great number of offsets about them, ſo that unleſs there is a want of them, the largeſt only ſhould be choſen; which ſhould be ſeparated from all the ſmaller, and each planted in a ſeparate pot, filled with kitchen-garden earth, and placed with other hardy exotic plants in the open air till autumn, when they muſt be removed into ſhelter for the winter ſeaſon, during which time, they muſt not have too much wet, for that will rot the roots. This plant is ſo hardy as to live in the open air in mild winters, without any cover, if they are planted in warm borders, and have a dry ſoil; but with a little ſhelter in hard froſt, they may be preſerved in the full ground very well. It flowers in May, and the ſeeds ripen in Auguſt; but as the roots increaſe ſo plentifully, few perſons care to ſow the ſeeds, becauſe the young plants will not flower in leſs than three years. The flowers of this plant have but little ſweetneſs, altho' by Herman's title, it ſhould have a very agreeable odour; but unleſs a perſon places it near him, it cannot be perceived. I have frequently received the ſeeds of this from the Cape of Good Hope, but have always found they produced the ſame ſort.

The ſecond ſort grows naturally in moiſt or marſhy grounds in many parts of Europe, ſo is rarely admitted into gardens.

The third ſort grows naturally on the mountains near Aleppo. This hath a thick tuberous root, from which ſpring up ſeveral oval leaves, ſtanding on pretty long foot-ſtalks; the ſpadix of the flower riſes between the leaves, about ſix or eight inches high, ſupporting one white flower at the top.

The roots of this ſort ſhould be planted in pots filled with light earth, and in ſummer they may be placed with other exotic plants in the open air; but in winter they ſhould be placed under a common hot-bed frame, to ſcreen them from froſt, to which if they are expoſed the roots will be deſtroyed; there is little beauty in this plant, ſo it is only preſerved in botanic gardens for variety.

CALLACARPA. See JOHNSONIA.

CALTHA. Lin. Gen. Plant. 623. *Marſh Marigold.*

The CHARACTERS are,

The flower hath no empalement, but is compoſed of five large, oval, concave petals, which ſpread open. It hath a great number of ſlender ſtamina, which are ſhorter than the petals, terminated by obtuſe erect ſummits: in the center there are ſeveral oblong compreſſed germen ſituated, which have no ſtyles, but are crowned by ſingle ſtigma. The germen afterward become ſo many ſhort pointed capſules, containing many roundiſh ſeeds.

This genus of plants is ranged in the ſeventh ſection of Linnæus's thirteenth claſs, intitled Polyandria Polygynia, the flowers of this claſs having many ſtamina, and of this ſection ſeveral germen.

The SPECIES are,

1. CALTHA (*Major*) foliis orbiculatis crenatis, flore majore. *Marſh Marigold with round crenated leaves, and a larger flower.* Populago flore majore. Tourn. Inſt. 273.
2. CALTHA (*Minor*) foliis orbiculato-cordatis crenatis flore minore. *Marſh Marigold with round heart-ſhaped leaves which are crenated, and a ſmaller flower.*

Theſe two ſorts are ſuppoſed to be the ſame, but I have never obſerved either of them to vary, either in their natural places of growth, or when they are removed into a garden. They both grow upon moiſt boggy land, in many parts of England, but the firſt is the moſt common; of this there is a variety with very double flowers, which for its beauty is preſerved in many gardens. This is propagated by parting the roots in autumn, and ſhould be planted in a moiſt ſoil and a ſhady ſituation; and as there are often ſuch places in gardens, where few other plants will thrive, ſo theſe may be allowed to have room, and during their ſeaſon of flowering, will afford an agreeable variety. This ſort with double flowers, doth not appear ſo early in the ſpring as the ſingle, but continues much longer in beauty. It flowers in May, and if the ſeaſon is not very warm, will continue till the middle of June.

CALYCANTHUS. See BASTERIA.

CALYX [with botaniſts, ſignifies the cup of a flower before it opens: this is ſtyled the empalement of the flower; in ſome plants this continues, and becomes afterward a cover to the ſeeds of herbs, and fruit of trees.] *Lat.* The cup incloſing or containing the flower.

CAMARA.. See LANTANA.

CAMERARIA. Plum. Nov. Gen. 18. tab. 29. Lin. Gen. Plant. 264.

This plant was ſo named by father Plumier, in honour of Joachim Camerarius, a phyſician and botaniſt of Nuremberg; who publiſhed an edition of Matthiolus, in Latin and High Dutch, with new figures of the plants, and many obſervations.

The CHARACTERS are,

The flower hath a ſhort permanent empalement of one leaf, cut into five acute ſegments at the top: the flower is of one leaf, ſalver-ſhaped, having a long cylindrical tube at bottom, which is enlarged above, and divided at the top into five acute ſegments. It hath five ſhort inflexed ſtamina, which are terminated by obtuſe membranaceous ſummits. In the bottom of the tube are ſituated two roundiſh germen, having one common ſtyle, which is cylindrical, and the length of the ſtamina, crowned by two ſtigma; the under one is orbicular and flat, the other is concave. The germen afterward becomes two long, taper, leafy capſules, filled with oblong cylindrical ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flowers of this claſs having five ſtamina, and thoſe in this ſection but one ſtyle.

The SPECIES are,

1. CAMERARIA (*Latifolia*) foliis ovatis, utrinque acutis tranſverſe ſtratis. Hort. Cliff. 76. Lin. Sp. Plant. 210. *Cameraria with roundiſh leaves ending in points tranſverſly ribbed.* Cameraria lato Myrti folio. Plum. Nov. Gen. 18.
2. CAMERARIA (*Anguſtifolia*) foliis linearibus. Lin. Sp. Plant. 210. *Cameraria with long narrow leaves.* Cameraria anguſto linariæ folio. Plum. Nov. Gen. 18.

The firſt ſort was ſent me from the Havanna by the late Dr. Houſtoun, where he found it growing naturally in great plenty. This riſes with a ſhrubby ſtalk to the height of ten or twelve feet, dividing into ſeveral branches, garniſhed with roundiſh pointed leaves placed oppoſite, having many ſmooth tranſverſe veins running from the midrib to the borders. The flowers are produced at the end of the branches in looſe cluſters, which have long tubes enlarging gradually upward, and at the top are cut into five ſegments, broad at their baſe, but end in ſharp points: the flower is of a yellowiſh white colour. After the flowers are fallen, the germen become two leafy capſules joined at their baſe, and have two ſwelling protuberances on each ſide at the bottom, the middle being extended conſiderably longer; theſe have one cell, filled with cylindrical ſeeds. It flowers in Auguſt, but never produces any ſeeds in England.

The ſecond ſort hath an irregular ſhrubby ſtalk, which riſes about eight feet high, ſending out irregular branches, garniſhed with very narrow thin leaves placed oppoſite; theſe have two ribs running longi-

tudinally

tudinally through each. The flowers are produced ſcatteringly at the end of the branches, which are ſhaped like thoſe of the former ſort, but ſmaller. Both theſe plants abound with an acrid milky juice like the Spurge. The ſecond ſort grows naturally in Jamaica.

Theſe plants are propagated by ſeeds, which muſt be procured from the places of their growth, for they do not perfect their ſeeds in England. They may alſo be propagated by cuttings planted in a hot-bed during the ſummer months: they muſt have a bark-ſtove, for they are very tender plants; but in warm weather muſt have plenty of air.

CAMOCLADIA, the Maiden Plumb.

The CHARACTERS are,

It hath a tripartite coloured empalement of one leaf, ſpreading open; the flower hath three plain, oval, ſpreading petals, and three awl-ſhaped ſtamina ſhorter than the corolla, terminated by roundiſh incumbent ſummits, and an oval germen, but no ſtyle, crowned by an obtuſe ſtigma; the empalement afterward becomes an oblong Plumb, having three punctures at the top, incloſing a nut of the ſame form.

This plant is ranged in the firſt order of Linnæus's third claſs, intitled Triandria Monogynia, the flower having three ſtamina and one ſtyle.

The SPECIES are,

1. CAMOCLADIA (*Integrifolia*) foliolis integris. Jacq. Amer. 12. *Cainocladia with entire lobes.* Prunus racemoſa, caudice non ramoſa, alato fraxini folio non crenato, fructu rubro ſubdulci. Sloan. Cat. 184. *The Maiden Plumb.*
2. CAMOCLADIA (*Dentata*) foliolis ſpinoſo-dentatis. Jacq. Amer. 12. *Camocladia with prickly indented leaves.*

The firſt ſort grows naturally in Jamaica, and alſo in many other of the iſlands in the Weſt Indies; this riſes with an upright ſtem near twenty feet high, garniſhed with long winged leaves, whoſe pinnæ are entire; at the top there are a few branches ſent out about a foot long, which ſuſtain the flowers and fruit.

The ſecond ſort grows naturally at the Havanna, where it riſes about the ſame height with the former; but as the flowers and fruit of this are unknown to the author, he can give no farther account of them.

Theſe plants are propagated by ſeeds, when they can be obtained from the places of their growth, which ſhould be ſown in pots and plunged into a hot-bed; the plants, when fit to remove, ſhould be each planted in a ſmall pot, and plunged into a tan-bed, and in the autumn ſhould be plunged into the bark-bed in the ſtove, and treated as other tender plants.

CAMPANIFORM flowers [of campana, a bell; and forma, *Lat.* ſhape,] ſuch flowers as in ſhape reſemble a bell.

CAMPANULA. Tourn. Inſt. R. H. 108. tab. 38. Lin. Gen. Plant. 201. [ſignifies a little bell, as tho' parva campana, *Lat.* ſo called, becauſe the flowers reſemble a little bell.]

The CHARACTERS are,

The empalement is divided into five acute parts, is upright, ſpreading, and reſts upon the germen. The flower is of one leaf, ſhaped like a bell, ſpreading at the baſe where there are holes. In the bottom is ſituated the five cornered nectarium, which is joined to the top of the receptacle. It hath five ſhort ſtamina, which are inſerted in the top of the valves of the nectarium, terminated by long compreſſed ſummits: below the receptacle is ſituated the angular germen, ſupporting a ſtyle which is longer than the ſtamina, crowned by a thick, oblong, tripartite ſtigma. The empalement afterward becomes a roundiſh angular capſule, which in ſome ſpecies have three, and in others five cells, each having a hole toward the top, through which the ſeeds are ſcattered when ripe.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia; the flowers of this claſs have five ſtamina, and in this ſection but one ſtyle.

The SPECIES are,

1. CAMPANULA (*Pyramidalis*) foliis ovatis glabris ſubſerratis, caule erecto paniculato, ramulis brevibus. Lin. Sp. 233. *Bell-flower with oval ſmooth leaves ſawed below, an upright paniculated ſtalk, and ſhort branches.* Campanula pyramidata altiſſima. Tourn. Inſt. 109. *Talleſt pyramidal Bell-flower.*
2. CAMPANULA (*Decurrens*) foliis radicalibus obovatis, caulinis lanceolato-linearibus ſubſerratis ſeſſilibus remotis. Lin. Sp. Plant. 164. *Bell-flower with lower leaves oval, and thoſe on the ſtalks narrow, ſpear-ſhaped, ſawed, and growing cloſe to the ſtalks at remote diſtances.* Campanula perſicæ folio. Cluſ. Hiſt. 171. *Peach-leafed Bell-flower.*
3. CAMPANULA (*Medium*) capſulis quinquelocularibus tectis, calycis ſinubus reflexis. Vir. Cliff. 16. *Bell-flower with a covered capſule, having five cells, and the borders of the cup reflexed.* Campanula hortenſis folio & flore oblongo. C. B. P. 94. *Commonly called Canterbury Bell-flower.*
4. CAMPANULA (*Trachelium*) caule angulato, foliis petiolatis, calycibus ciliatis, pedunculis trifidis. Vir. Cliff. 16. *Bell-flower with an angular ſtalk, leaves having foot-ſtalks, a hairy empalement, and trifid foot-ſtalks to the flowers.* Campanula vulgatior, foliis urticæ vel major & aſperior. C. B. P. 94. *Nettle-leaved Bell-flower.*
5. CAMPANULA (*Latifolia*) foliis ovato-lanceolatis, caule ſimpliciſſimo tereti, floribus ſolitaris pedunculatis fructibus cernuis. Vir. Cliff. 17. *Bell-flower with oval ſpear-ſhaped leaves, a ſingle taper ſtalk, flowers growing ſingly upon foot-ſtalks, and pendent fruit.* Campanula maxima foliis latiſſimis. C. B. P. 94. *Greateſt Bell-flower with broadeſt leaves.*
6. CAMPANULA (*Rapunculus*) foliis undulatis radicalibus lanceolato-ovalibus, paniculâ coarctatâ. Hort. Upſal. 40. *Bell-flower with waved leaves, thoſe growing near the ſtalk oval and ſpear-ſhaped, and a compreſſed panicle.* Campanula radice eſculentâ. H. L. *Commonly called Rampion.*
7. CAMPANULA (*Glomerata*) caule angulato ſimplici, floribus ſeſſilibus capitulo terminali. Vir. Cliff. 16. *Bell-flower with a ſingle angular ſtalk, flowers growing cloſe, and terminating in a head.* Campanula pratenſis flore conglomerato. C. B. P. 94. *Meadow Bell-flower with flowers gathered in bunches.*
8. CAMPANULA (*Speculum*) caule ramoſiſſimo diffuſo foliis oblongis ſubcrenatis, calycibus ſolitariis corollâ longioribus, capſulis priſmaticis. Hort. Upſal. 41. *Bell-flower with a very branching diffuſed ſtalk, oblong crenated leaves, ſolitary flower-cups which are longer than the petal, and priſmatic capſules.* Campanula arvenſis erecta Euphraſiæ luteæ, ſeu Triſſaginis appulæ foliis. H. Cath. *Commonly called upright Venus Looking-glaſs.*
9. CAMPANULA (*Hybrida*) caule baſi ſubramoſo ſtricto, foliis oblongis crenatis, calycibus aggregatis corollâ longioribus, capſulis priſmaticis. Lin. Sp. Plant. 168. *Bell-flower with a ſtalk branching at the bottom, oblong crenated leaves, flower-cups gathered together, which are longer than the petal, and priſmatic capſules.* Campanula arvenſis minima erecta. Mor. Hiſt. 2. 457. *Small Venus Looking-glaſs.*
10. CAMPANULA (*Erinus*) caule dichotomo, foliis ſeſſilibus utrinque dentatis. Hort. Cliff. 65. *Bell-flower with a forked ſtalk, and leaves growing cloſe to the ſtalks, which are indented on both ſides.* Campanula minor annua, foliis inciſis. Mor. Hiſt. 1. 458. *Smaller annual Bell-flower with cut leaves.*
11. CAMPANULA (*Pentagonia*) caule ſubdiviſo ramoſiſſimo, foliis linearibus acuminatis. Hort. Cliff. 66. *Bell-flower with a very branching divided ſtalk, and narrow pointed leaves.* Campanula pentagonia flore ampliſſimo Thracia. Tourn. Inſt. 112. *Five-cornered Bell-flower of Thracica.*
12. CAMPANULA (*Perfoliata*) caule ſimplici, foliis cordatis dentatis amplexicaulibus, floribus ſeſſilibus aggregatis. Hort. Upſal. 40. *Bell-flower with a ſingle ſtalk, heart-ſhaped indented leaves which embrace the ſtalk, and flowers gathered together, growing cloſe to the ſtalk,*

Campanula pentagonia perfoliata. Mor. Hiſt. 2. p. 457. *Five-cornered perfoliate Bell-flower.*

13. CAMPANULA (*Americana*) caule ramoſo, foliis linguiformibus crenulatis margine cartilagineo. Prod. Leyd. 246. *Bell-flower with a branching ſtalk, and tongue-ſhaped crenulated leaves with ſtiff edges.* Campanula minor Americana, foliis rigidis flore cæruleo patulo. H. L. 107. *Smaller American Bell-flower.*

14. CAMPANULA (*Canarienſis*) foliis haſtatis dentatis oppoſitis petiolatis, capſulis quinquelocularibus. Lin. Sp. Plant. 168. *Bell-flower with ſpear-ſhaped indented leaves growing oppoſite, having foot-ſtalks and capſules with five cells.* Campanula Canarienſis, atriplicis folio, tuberosâ radice. *Canary Bell-flower.*

15. CAMPANULA (*Patula*) foliis ſtrictis, radicalibus lanceolato-ovalibus, panicula patula. Flor. Suec. 186. *Bell-flower whoſe radical leaves are oval, ſpear-ſhaped, and ſpreading flowers in panicles.* Campanula eſculenti facie, ramis & floribus patulis. Hort. Elth. 1. 68.

16. CAMPANULA (*Cervicaria*) hiſpida, floribus ſeſſilibus, capitulo terminali, foliis lanceolato-linearibus undulatis. Lin. Sp. 235. *Rough Bell-flower with ſeſſile flowers terminating the ſtalks, and linear, ſpear-ſhaped, waved leaves.* Campanula foliis echii. C. B. 36.

17. CAMPANULA (*Saxatilis*) foliis obovatis crenatis, floribus alternis nutantibus, capſulis quinquecarinatis. Lin. Sp. 237. *Bell-flower with oval crenated leaves, nodding flowers placed alternate, and boat-ſhaped capſules with five cells.* Campanula Cretica ſaxatilis, bellidis folio, magno flore. Tourn. Inſt. 111.

There are ſeveral other ſpecies of this genus, ſome of which grow naturally in England, and others in the northern parts of Europe, which have but little beauty, therefore are ſeldom cultivated in gardens, ſo I ſhall not enumerate them here. There are alſo ſeveral varieties of ſome of the ſorts here mentioned, which I ſhall take notice of in their proper place; but as they are not diſtinct ſpecies, they are omitted in the above liſt.

The firſt ſort hath thick tuberous roots which are milky; this ſends out three or four ſtrong, ſmooth, upright ſtalks, which riſe near four feet high, and are garniſhed with ſmooth oblong leaves, whoſe edges are a little indented. The lower leaves are much broader than thoſe which adorn the ſtalks. The flowers are produced from the ſide of the ſtalks, and are regularly ſet on for more than half their length, forming a ſort of pyramid; theſe are large, open, and ſhaped like a bell. The moſt common colour of the flowers is a light blue; but there have been ſome with white flowers, which make a variety when intermixed with the blue, but the latter is moſt eſteemed.

This plant is cultivated to adorn halls, and to place before the chimnies in the ſummer, when it is in flower, for which purpoſe there is no plant more proper; for when the roots are ſtrong, they will ſend out four or five ſtalks, which will riſe as many feet high, and are garniſhed with flowers great part of their length. Theſe upright ſtalks ſend out ſome ſhort ſide branches, which are alſo adorned with flowers, ſo that by ſpreading the upright ſtalks to a flat frame compoſed of ſlender laths (as is uſually practiſed) the whole plant is formed into the ſhape of a fan, and will ſpread near the width of a common fire-place. When the flowers begin to open, the pots are removed into the rooms, where, being ſhaded from the ſun, and kept from the rain, the flowers will continue long in beauty; and if the pots are every night removed into a more airy ſituation, but not expoſed to heavy rains, the flowers will be fairer, and continue much longer in beauty.

Thoſe plants which are thus treated, are ſeldom fit for the purpoſe the following ſeaſon, therefore a ſupply of young plants ſhould be annually raiſed. The common method of propagating this plant, is by dividing the roots. The beſt time for doing this is in September, that the offsets may have time to get ſtrong roots before winter.

This method of propagating by the offsets is the quickeſt, therefore generally practiſed, but the plants which are raiſed from ſeeds, are always ſtronger; the ſtalks will riſe higher, and produce a greater number of flowers, therefore I recommend it to the practice of the curious; but in order to obtain good ſeeds, there ſhould be ſome ſtrong plants placed in a warm ſituation, near a pale, or wall, in autumn; and, if the following winter ſhould prove ſevere, they ſhould be covered either with hand-glaſſes or mats, to prevent their being injured by the froſt; and, in the ſummer, when the flowers are fully open, if the ſeaſon ſhould prove very wet, the flowers muſt be ſcreened from great rains, otherwiſe there will be no good ſeeds produced: the not obſerving this, has occaſioned many to believe that the plants do not bear ſeeds in England, which is a great miſtake, for I have raiſed great numbers of the plants from ſeeds of my own ſaving; but I have always found that the plants which have been long propagated by offsets, ſeldom produce ſeeds, which is the ſame with many other plants which are propagated by ſlips, or cuttings, which in a few years become barren.

When the ſeeds are obtained, they muſt be ſown in autumn in pots, or boxes, filled with light undunged earth, and placed in the open air till the froſt or hard rains come on, when they ſhould be placed under a hot-bed frame, where they may be ſheltered from both, but in mild weather the glaſſes ſhould be drawn off every day, that they may enjoy the free air; with this management the plants will come up early in the ſpring, and then they muſt be removed out of the frame, placing them firſt in a warm ſituation; but when the ſeaſon becomes warm, they ſhould be removed where they may have the morning ſun only. During the following ſummer they muſt be kept clean from weeds, and in very dry weather, now and then refreſhed with water, which muſt be given with great caution, for the roots are very ſubject to rot with too much moiſture. In September the leaves of the plants will begin to decay, at which time they ſhould be tranſplanted; therefore there muſt be one or two beds prepared, in proportion to the number of plants. Theſe beds muſt be in a warm ſituation, and the earth light, ſandy, and without any mixture of dung, which laſt is an enemy to this plant. If the ſituation of the place is low, or the natural ſoil moiſt, the beds muſt be raiſed five or ſix inches above the ſurface of the ground, and the natural ſoil removed a foot and a half deep, putting lime rubbiſh eight or nine inches thick in the bottom of the trench, to drain off the moiſture. When the beds are prepared, the plants muſt be taken out of the pots, or caſes, very carefully, ſo as not to break or bruiſe their roots, for they are very tender, and, on being broken, the milky juice will flow out plentifully, which will greatly weaken them. Theſe ſhould be planted at about four inches diſtance each way, with the head or crown of the root half an inch below the ſurface; if there happens a gentle ſhower of rain ſoon after they are planted, it will be of great ſervice to the plants; but as the ſeaſon ſometimes proves very dry at this time of the year, in that caſe, it will be proper to give them a gentle watering three or four days after they are planted, and to cover the beds with mats every day, to prevent the ſun from drying the earth; but theſe muſt be taken off in the evening, that the dew may fall on the ground. Towards the end of October the beds ſhould be covered over with ſome old tanners bark to keep out the froſt, and where there is not conveniency of covering them with frames, they ſhould be arched over with hoops, that in ſevere froſts they may be covered with mats; for theſe plants, when young, are often deſtroyed in winter, where this care is wanting. In the ſpring the coverings muſt be removed, and the following ſummer the plants muſt be kept clean from weeds; and, if the ſeaſon ſhould prove very dry, they muſt now and then be refreſhed with water. The following autumn the ſurface of the ground ſhould be ſtirred between the plants, and

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ſome freſh earth ſpread over the beds, and in the winter covered as before. In theſe beds the plants may remain two years, during which time they muſt be treated in the manner before directed; by which time the roots will be ſtrong enough to flower: in September they ſhould be carefully taken up, and ſome of the moſt promiſing planted in pots; the others may be planted into warm borders, or in a freſh bed, at a greater diſtance than before, to allow them room to grow. Theſe plants which are potted ſhould be ſheltered in winter from great rains and hard froſts, otherwiſe they will be in danger of rotting, or at leaſt be ſo weakened, as not to flower with any ſtrength the following ſummer; and thoſe which are planted in the full ground, ſhould have ſome old tanners bark laid round them, to prevent the froſt from entering deep to the roots; with this management theſe plants may be brought to the utmoſt perfection, and a conſtant ſucceſſion of good roots raiſed, which will be much preferable to thoſe which are propagated by offsets. I have been informed that there is a double flower of this kind, but as I have not ſeen any, I can give no farther account of it. This ſort is by ſome called Steeple Bell-flower.

The ſecond ſort grows naturally in the northern parts of Europe, but has been long cultivated in the Engliſh gardens; of this there are the following varieties, viz. the ſingle, blue, and white flower, which have been long here; and the double flower of both colours, which has not been more than twenty-eight years in England, but has been propagated in ſuch plenty, as to have almoſt baniſhed thoſe with ſingle flowers from the gardens. All theſe varieties are eaſily propagated by parting their roots in autumn, every head which is then ſlipped off will take root; they are extreme hardy, ſo will thrive in any ſoil or ſituation, therefore are very proper furniture for the common borders of the flower-garden.

This hath a root compoſed of many fibres, and ſends up an angular, or channelled ſtiff ſtalk, about two feet and a half high, garniſhed with oblong, oval, ſtiff leaves near the root, which are placed without order; but thoſe on the ſtalks are longer and narrower, having their edges ſlightly indented, and are of a ſhining green. The flowers are produced towards the upper part of the ſtalk upon ſhort foot-ſtalks. Theſe are ſhaped like thoſe of the former ſort, but are ſmaller, and more expanded. This flowers in June and July, and in cool ſeaſons there will be ſome continue great part of Auguſt.

The third ſort is a biennial plant, which periſhes ſoon after it hath ripened ſeeds. It grows naturally in the woods of Italy and Auſtria, but is cultivated in the Engliſh gardens for the beauty of its flowers. Of this ſort there are the following varieties, the blue, the purple, the white, the ſtriped, and the double flowering, but the laſt two are not very common in England.

This hath oblong, rough, hairy leaves, which are ſerrated on their edges, coming out without order from the root; from the center of theſe a ſtiff, hairy, furrowed ſtalk, ariſes about two feet high, ſending out ſeveral lateral branches, from the bottom upward, garniſhed with long, narrow, hairy leaves, ſawed on their edges, and are placed alternately; from the ſetting on of theſe leaves, come out the foot-ſtalks of the flower, thoſe which are on the lower part of the ſtalk and branches being four or five inches long, diminiſhing gradually in their length upward, and thereby form a ſort of pyramid. The flowers of this kind are very large, ſo make a fine appearance; they come out the beginning of June, and, if the ſeaſon is not very hot, will continue a month in beauty. The ſeeds ripen in September, and the plants decay ſoon after.

It is propagated by ſeeds, which muſt be ſown in the ſpring on an open bed of common earth, and when the plants are fit to remove, they ſhould be tranſplanted into the flower-nurſery, in beds ſix inches aſunder, obſerving to water them frequently till they have taken new root; after which they will require no other culture, but to keep them clean from weeds till the following autumn, when they ſhould be tranſplanted into the borders of the flower-garden. As theſe plants decay the ſecond year, there ſhould be annually young ones raiſed to ſucceed them.

The fourth ſort hath a perennial root, which ſends up ſeveral ſtiff hairy ſtalks, having two ribs or angles. Theſe put out a few ſhort ſide branches, garniſhed with oblong, pointed, hairy leaves, deeply ſawed on their edges. Toward the upper part of the ſtalks the flowers come out alternately, upon ſhort trifid foot-ſtalks, having hairy empalements. The flowers are of the ſhape of the former, but ſhorter, ſpread more at the brim, and are pretty deeply cut into many acute ſegments. This flowers in June, and the ſeeds ripen in autumn.

The varieties of this are, the deep and pale blue; the white with ſingle flowers, and the ſame colours with double flowers. The double ſorts are propagated by parting their roots in autumn, which ſhould be annually performed, otherwiſe the flowers are apt to degenerate to ſingle; to prevent which, the roots ſhould be every autumn tranſplanted and parted. The ſoil ſhould not be too light or rich, in which they are planted, for in either of theſe they will degenerate; but in a ſtrong freſh loam their flowers will be in the greateſt perfection. Theſe plants are extreme hardy, ſo may be planted in any ſituation; thoſe with ſingle flowers do not merit a place in gardens.

The fifth ſort grows naturally in the northern parts of England: this hath a perennial root, compoſed of many fleſhy fibres, which abound with a milky juice, from which ariſe ſeveral ſtrong, round, ſingle ſtalks, which never put out branches, but are garniſhed with oval ſpear-ſhaped leaves, ſlightly indented on their edges, which are placed alternately. Toward the upper part of the ſtalk the flowers come out ſingly upon ſhort foot-ſtalks; theſe ſpread open at the brim, where they are deeply cut into five acute ſegments. After the flowers are paſt, the empalement becomes a five-cornered ſeed-veſſel, which turns downward till the ſeeds are ripe, when it riſes upward again.

The varieties of this are, the blue, purple, and white flowering. This ſort is eaſily propagated by ſeeds, which it furniſhes in great plenty, and, if ſuffered to ſcatter, the plants will come up in as great plenty the following ſpring; when they may be tranſplanted into the nurſery till autumn, at which time they ſhould be tranſplanted where they are deſigned to remain. As this ſort delights in ſhade, the plants may be planted under trees, or in ſhady borders where few better things will thrive, they will afford an agreeable variety when they are in flower. It flowers in June and July, and the ſeeds ripen in autumn.

The ſixth ſort hath roundiſh fleſhy roots which are eatable, and are much cultivated in France for ſallads, and ſome years paſt it was cultivated in the Engliſh gardens for the ſame purpoſe, but is now generally neglected. It grows naturally in ſeveral parts of England, but the roots never grow to half the ſize of thoſe which are cultivated. This is propagated by ſeeds, which ſhould be ſown in a ſhady border the latter end of May, and when the plants are about an inch high, the ground ſhould be hoed, as is practiſed for Onions, to cut up the weeds, and thin the plants to the diſtance of three or four inches; and when the weeds come up again, they muſt be hoed over to deſtroy them: this, if well performed in dry weather, will make the ground clean for a conſiderable time, ſo that being three times repeated, it will keep the plants clean till winter, which is the ſeaſon for eating the roots, when they may be taken up for uſe as they are wanted. Theſe will continue good till April, at which time they will ſend out their ſtalks, when they will become hard and unfit for uſe, as do alſo thoſe roots which have flowered; ſo that the young roots only are ſuch which are fit for the table, therefore when the ſeeds are ſown too early, the plants frequently run up to flower the ſame year, which ſpoils their roots.

This ſort ſends out upright ſtalks about two feet high, which are garniſhed with oblong ſpear-ſhaped leaves, placed alternately. Towards the upper part of the ſtalk the ſmall Bell-flowers are produced, ſtanding upright cloſe to the ſtalk; ſome of theſe flowers are blue, and others white; they come out in June and July, and the ſeeds ripen in autumn.

The ſeventh ſort grows naturally upon chalky paſtures in many parts of England, where the ſtalks do not riſe many times a foot high, and in other places it grows to double that height, which has occaſioned their being taken for two diſtinct plants. This hath a perennial root, which ſends up ſeveral round hairy ſtalks, which often riſe upward of two feet high; the bottom leaves are broad, and ſtand upon long foot-ſtalks, and are ſlightly ſawed on their edges. Thoſe which are upon the ſtalks are long, narrow, have no foot-ſtalks, and are placed alternately at conſiderable diſtances. From the wings of the leaves, towards the upper part of the ſtalk, come out long naked foot-ſtalks, ſupporting two or three bell-ſhaped flowers, cloſely joined together in a head, and the main ſtalk is terminated by a large cluſter of the ſame flowers, which are ſucceeded by roundiſh capſules filled with ſmall ſeeds. This plant is eaſily propagated either by ſeeds, or parting their roots, and will thrive in any ſoil or ſituation. It flowers in July, and the ſeeds ripen in autumn.

The eighth ſort is an annual plant, which riſes with ſlender ſtalks a foot high, branching out, garniſhed with oblong leaves, a little curled on their edges; from the wings of the leaves come out the flowers, ſitting cloſe to the ſtalks, which are of a beautiful purple, inclining to a Violet-colour, divided into five ſegments, which reſemble ſo many leaves, and in the evening contract and fold into a pentagonal figure; from whence it is by ſome titled Viola Pentagonia, or five-cornered Violet. The empalement which encompaſſes the flower, is compoſed of five, long, narrow, green leaves, which ſpread open, and are much longer than the petals of the flower; theſe remain on the top of the priſmatic ſeed-veſſel, which is filled with ſmall angular ſeeds. If this plant is ſown in autumn, it will grow much taller, and flower a month earlier than when the ſeeds are ſown in the ſpring. The autumnal plants will flower in May, and the ſpring plants in June and July. There is a variety of this with white flowers, and another with pale purple.

The ninth ſort is the common Venus Looking-glaſs, which hath been long cultivated in the Engliſh gardens. This ſort ſeldom riſes more than ſix inches high, with a ſtalk branching from the bottom upward, garniſhed with oval leaves, ſitting cloſe to the ſtalks, from the baſe of which the branches are produced, which are terminated by flowers very like thoſe of the former ſort.

The tenth ſort grows naturally in the ſouth of France and Italy. This is alſo a low annual plant, which ſeldom riſes ſix inches high, but divides into many branches, garniſhed with ſhort oval leaves, ſitting cloſe, which are deeply indented on both ſides. The flowers are produced at the ends of the branches, which are ſhaped like thoſe of the other ſort laſt mentioned, but they are ſmall, their colours leſs beautiful, and the leaves of the empalement are broader.

The eleventh ſort grows naturally in Thrace, but hath been long in the Engliſh gardens. This is alſo a low annual plant, which riſes little more than ſix inches high; the ſtalks divide by pairs, and frequently there ariſes a branch from the middle of the diviſions; the lower leaves are oblong and obtuſe, but thoſe which come out toward the end of the branches are much narrower, and pointed. The flowers come out ſingle at the end of the branches, having a long five-leaved empalement, and are larger than thoſe of the three laſt ſorts, of a fine blue colour; the ſeeds are like thoſe of the eighth ſort.

The twelfth ſort is an annual plant, which, in good ground, will riſe a foot and a half high, but in poor land, or it where it grows wild among corn, ſcarcely riſes to the height of ſix inches. The ſtalk is ſingle, rarely putting out any branches, unleſs near the root, from whence there are ſometimes one or two ſhort lateral branches produced. The leaves are roundiſh, and embrace the ſtalk at their baſe; their edges are ſharply ſawed, and from their baſe comes out a cloſe tuft of flowers, ſurrounded by the leaf, as in an empalement. The flowers are five-cornered, ſhaped like thoſe of the Venus Looking-glaſs, but are much ſmaller; theſe are produced the whole length of the ſtalk. The ſeeds are incloſed in ſhort capſules, which are ſhaped like thoſe of the former ſorts. It grows in Italy, and alſo in Virginia. If the ſeeds of this ſort are permitted to ſcatter, the plants will come up without care; or the ſeeds may be ſown in the ſpring, in the ſame manner as thoſe of the laſt ſorts, and treated in the ſame way.

The thirteenth ſort is a native of America, but has been long cultivated in the gardens of the curious, both in England and Holland. This hath many rigid oblong leaves coming out from the root on every ſide, which form a ſort of head like thoſe of Houſeleek, crenated, having a ſtrong rib running on their border longitudinally. From the center of the plant proceeds the ſtalk, which riſes about a foot high, and is thinly garniſhed with very narrow ſtiff leaves, of a ſhining green. From the wings of the leaves come out the foot-ſtalks of the flower, which are from two to four inches long, each being terminated by one ſpreading bell-ſhaped flower, whoſe empalement is ſhort, and cut into five acute ſegments. The ſtyle of this is longer than the petal, and is crowned by a bifid ſtigma. There is a white and a blue flower of this ſort in the gardens, but in Holland they have it with a double flower. This ſort doth not produce ſeeds in England, ſo is only propagated by offſets; theſe may be taken off from the old plants in Auguſt, that they may get good root before the cold weather begins: they muſt be planted in ſmall pots filled with freſh, light, loamy earth, and placed in the ſhade until they have taken root; then they may be placed with other hardy exotic plants, and in autumn they muſt be removed into ſhelter, for in ſevere winters theſe plants are often deſtroyed which are expoſed; though in mild winters they will live in the open air. It flowers in July and Auguſt.

The fourteenth ſort is a native of the Canary Iſlands, from whence it was introduced to the gardens in Europe, where it hath been many years cultivated; and of late years great numbers of the plants have been raiſed from ſeeds which were brought from thence, but the flowers of theſe new-raiſed plants are not ſo well coloured as thoſe of the old ones.

This hath a thick fleſhy root, which is of an irregular form, ſometimes running downward like a Parſnep, at other times dividing into ſeveral knobs near the top, and when any part of the root is broken, there iſſues out a milky juice at the wound. There are many ſtrong fleſhy fibres ſent out, which ſtrike deep into the ground, and from theſe a numerous quantity of ſmall ones. From the head, or crown of the root, ariſe one, two, three, or more ſtalks, in proportion to the ſize of the root; but that in the center is generally larger, and riſes higher than the others. Theſe ſtalks are very tender, round, and of a pale green; their joints are far diſtant from each other, and when the roots are ſtrong, the ſtalks will riſe ten feet high, ſending out ſeveral ſmaller ſide branches. At each joint they are garniſhed with two, three, or four ſpear-ſhaped leaves, with a ſharp pointed beard on each ſide. Theſe are of a ſea-green, and, when they firſt come out, are covered ſlightly with an Aſh-coloured pounce. From the joints of the ſtalk the flowers are produced, which are of the perfect bell-ſhape, and hang downward; they are of a flame colour, marked with ſtripes of a browniſh red; the flower is divided into five parts, at the bottom of each is ſituated a nectarium, covered with a white tranſparent ſkin, much reſembling thoſe of the Crown Imperial, but

are ſmaller; upon each of theſe is ſituated a ſtamen, which riſes almoſt the length of the petal, and is terminated by oblong ſummits. In the center of the flower is ſituated the ſtyle, which is longer than the ſtamina, and is crowned by a trifid ſtigma, which is reflexed. The flowers begin to open in the beginning of October, and there is often a ſucceſſion of them till March. The ſtalks decay to the root in June, and new ones ſpring up in Auguſt.

It is propagated by parting their roots, which muſt be done with caution; for if the roots are broken or wounded, the milky juice will flow out plentifully, ſo that if theſe are planted before the wounds are ſkinned over, it occaſions their rotting; therefore whenever any of them are broken, they ſhould be laid in the green-houſe a few days to heal. Theſe roots muſt not be too often parted, eſpecially if they are expected to flower well; for by frequent parting the roots are weakened. The beſt time for tranſplanting and parting their roots, is in July, ſoon after the ſtalks are decayed. The earth in which theſe ſhould be planted, ſhould not be rich, for that will cauſe them to be luxuriant in branches, and but thinly garniſhed with flowers. The ſoil in which they have ſucceeded beſt, is a light ſandy loam, mixed with a fourth part of ſcreened lime-rubbiſh: when the roots are firſt planted, the pots ſhould be placed in the ſhade; and, unleſs the ſeaſon is very dry, ſhould not be watered, for during the time they are inactive, wet is very injurious to them. About the middle of Auguſt the roots will begin to put out fibres, at which time, if the pots are placed under a hot-bed frame, and as the nights grew cool, covered with the glaſſes, but opened every day to enjoy the free air, it will greatly forward them for flowering, and increaſe their ſtrength; when the ſtalks appear, the plants muſt be now and then refreſhed with water, which muſt not be given too often, nor in great quantity. The plants thus managed, by the middle of September, will have grown ſo tall, as not to be kept longer under the frame, ſo they ſhould be removed into a dry airy glaſs-caſe, where they may enjoy the free air in mild weather, but ſcreened from cold. During the winter ſeaſon they muſt be frequently refreſhed with water, and guarded from froſt; and in ſpring, when the ſtalks begin to decay, the pots ſhould be ſet abroad in the ſhade, and not watered.

The fifteenth ſort grows naturally in ſome of the north-weſt counties of England. It is a biennial plant, very like the eatable ſort, but the branches grow more horizontal, and the flowers ſpread wider open.

This is propagated by ſeeds, which ſhould be ſown in the autumn; for thoſe ſeeds which are ſown in the ſpring often fail, or at leaſt lie a year in the ground before they grow. When the plants come up, they ſhould be thinned and kept clean from weeds, which is all the culture they require.

The ſixteenth ſort grows naturally in Germany and Sweden; this hath rough leaves: the ſtalk riſes two feet high, garniſhed with narrow ſpear-ſhaped leaves, and are terminated by an obtuſe ſpike of flowers.

The ſeventeenth ſort grows naturally in Crete, upon rocks, where the roots penetrate the fiſſures, whereby the plants continue much longer than when they are tranſplanted into gardens. The ſtalks of this riſe a foot high, garniſhed with oval crenated leaves; the flowers are large, blue, and placed alternate, nodding toward the ground; theſe open in July, and are ſucceeded by ſeed-veſſels, having five cells filled with ſmall ſeeds.

Theſe plants are propagated by ſeeds, which, if ſown in the autumn, will more certainly ſucceed than when ſown in the ſpring. When the plants are fit to remove, they ſhould be tranſplanted into beds, and treated in the ſame manner as the hardy ſorts beforementioned; but a few plants of the laſt ſort may be planted in pots, to be ſheltered in winter.

CAMPHORA. See LAURUS.

CAMPHOROSMA. Camphorata. Tourn. Inſt.

The CHARACTERS are,

It hath a pitcher-ſhaped four-pointed empalement, which is permanent, but no corolla. It has four ſlender ſtamina which are equal, terminated by oval ſummits, and an oval compreſſed germen, ſupporting a ſlender ſtyle longer than the empalement, crowned by acute ſtigma. The empalement afterward becomes a capſule crowned with one cell open at the top, incloſing one compreſſed ſeed.

The SPECIES are,

1. CAMPHORASMA (*Monſpeliaca*) foliis hirſutis linearibus. Amœn. Acad. 1. p. 392. *Camphorata with linear hairy leaves.* Camphorata hirſuta. C. B. P. 486.
2. CAMPHORATA (*Glabra*) foliis ſubtriquetris glabris inermibus. Amœn. Acad. p. 393. *Camphorata with ſmooth three-cornered leaves.*

The firſt ſort grows naturally about Montpelier. It is an annual plant, whoſe branches trail on the ground, and extend each way a foot and more in length, garniſhed with linear hairy leaves placed cloſe on the branches; the flowers are produced from the joints of the ſtalks, which are ſo ſmall as to be ſcarce perceptible, having no petals but a pitcher-ſhaped empalement, which afterward becomes a capſule to the ſeed. This is an annual plant, which is propagated by ſeeds, which, if ſown in the autumn, will more probably ſucceed, than if ſown in the ſpring; and if the ſeeds are permitted to fall in the autumn, there will be a ſupply of young plants the following ſpring.

The ſecond ſort grows naturally in the Helvetian mountains. This is a perennial plant, whoſe branches trail on the ground; the leaves are ſmooth, three-cornered, and unarmed. The flowers are not more viſible than thoſe of the firſt ſort, and the empalement becomes a cover to the ſeeds.

Theſe plants are preſerved in ſome gardens, more for the ſake of variety, than for either beauty or uſe; if the ſeeds are ſown in any abject part of the garden, and when the plants come up, they are thinned, and afterward kept clean from weeds, they will ripen their ſeeds, which, if permitted to ſcatter, there will be a ſupply of plants.

CAMPION. See LYCHNIS.

CANDLE-BERRY-TREE. See MYRICA.

CANDY-TUFT. See IBERIS.

CANNA. Lin. Gen. Plant. 1. Indian flowering Reed. In French Baliſier.

The CHARACTERS are,

The flower hath a three-leaved empalement, which is permanent, erect, and coloured. It hath one petal, which is divided into ſix parts: the three upper ſegments are erect, and broader than the lower, which are longer, two of which are erect, and the other turns back and is twiſted. It hath one ſpear-ſhaped ſtamina riſing as high as the petal, having the appearance of a ſegment, which hath a ſlender ſummit ſitting upon its border. Below the empalement is ſituated a roundiſh rough germen, ſupporting a flat ſtyle, with a ſlender ſtigma faſtened to its border. After the flower is paſt, the germen becomes an oblong, roundiſh, membranaceous capſule, having three longitudinal furrows, crowned by the empalement, which hath three cells filled with round ſmooth ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's firſt claſs, intitled Monandria Monogynia. The flowers of this claſs have but one ſtamen, and in this ſection but one ſtyle.

The SPECIES are,

1. CANNA (*Indica*) foliis ovatis utrinque acuminatis nervoſis. Prod. Leyd. 11. *Canna with oval nervous leaves pinnted at both ends.* Cannacorus latifolius vulgaris. Tourn. Inſt. 367.
2. CANNA (*Latifolia*) foliis oblongo-ovato, acuminatis, ſegmentis florum anguſtioribus. *Canna with oblong, oval, pointed leaves, and the ſegments of the flower narrow.* Cannacorus ampliſſimo folio flore rutilo. Tourn. Inſt. 367.
3. CANNA (*Coccinea*) foliis ovatis obtuſis nervoſis, ſpicis florum longioribus. *Canna with oval, obtuſe, nervous leaves, and longer ſpikes of flowers.* Cannacorus flore Coccineo ſplendente. Tourn. Inſt. 367.

4. CANNA (*Lutea*) foliis ovatis petiolatis nervoſis ſpatha floribus longiore. *Canna with oval, obtuſe, nervous leaves, having foot-ſtalks, and a longer hood to the flower.* Cannacorus flore luteo punctato. Tourn. Inſt. R. H. 367.
5. CANNA (*Glauca*) foliis lanceolatis petiolatis enervibus. Prod. Leyd. 11. *Canna with ſpear-ſhaped ſmooth leaves having foot-ſtalks.* Cannacorus glaucophyllus, ampliore flore, Iridis paluſtris facie. Hort. Elth. 69.

The firſt ſort grows naturally in both Indies: the inhabitants of the Britiſh iſlands in America, call all the ſpecies without diſtinction Indian Shot, from the roundneſs and hardneſs of the ſeeds.

This plant hath a thick, fleſhy, tuberous root, which divides into many irregular knobs, ſpreading wide near the ſurface of the ground, ſending out many large oval leaves without any order; theſe, at their firſt appearance, are twiſted like a horn, but afterwards expand and are near a foot long, and five inches broad in the middle, leſſening gradually to both ends, and terminating in points. They have many large tranſverſe veins running from the midrib to the ſides, which are prominent on their under ſide; and between each of theſe run two ſmaller, parallel, pointed veins, which are peculiar to this ſpecies. The ſtalks are herbaceous, riſing four feet high, encompaſſed by the broad leafy foot-ſtalks of the leaves; theſe are compreſſed on two ſides; at the upper part of the ſtalk the flowers are produced in looſe ſpikes, each being at firſt covered by a leafy hood, which afterward ſtands below the flower, and turns to a brown colour. Each flower hath one petal, which is cut almoſt to the bottom into ſix ſlender ſegments, the three upper being broadeſt; theſe are of a pale red colour. The flower is encompaſſed by a three-leaved empalement, which ſits upon a ſmall, roundiſh, rough germen, which, after the flower is fallen, ſwells to a large fruit or capſule oblong and rough, having three longitudinal furrows, and is crowned by the three-leaved empalement of the flower which remains. When the fruit is ripe, the capſule opens lengthways into three cells, which are filled with round, hard, black, ſhining ſeeds. The principal ſeaſon of theſe plants flowering, is in June, July, and Auguſt.

As this ſort is a native of the warmeſt parts of America, it requires to be placed in a moderate ſtove in winter, otherwiſe the roots will decay. I have frequently tried to keep theſe roots through the winter in a green-houſe, but could not ſucceed; for although ſome have eſcaped, yet they were ſo much weakened by the cold, as not to recover their ſtrength the following ſummer, ſo as to flower in any tolerable degree of perfection; ſo that I have ſince conſtantly kept them in winter in a moderate ſtove, where they always flower in that ſeaſon, at which time they make a fine appearance; and in the ſummer, place them abroad in a ſheltered ſituation with other tender exotic plants, where they flower again, and produce ripe ſeeds annually.

The ſecond ſort grows naturally in Carolina, and ſome of the other northern provinces of America. The leaves of this ſort are longer than thoſe of the former, and terminate in ſharper points. The ſtalks grow taller, and the ſegments of the flower are much narrower; the colour is a pale red, ſo it makes no great appearance. The ſeeds are like thoſe of the former ſort. If the roots of this ſort are planted in warm borders and a dry ſoil, they will live through the winter in the open air. I have plants of this ſort in the Chelſea garden, which have ſurvived twelve winters in a ſouth-weſt border without cover, and flower well every year, but do not produce ſeeds.

The third ſort hath larger leaves than either of the former; the ſtalks riſe much taller. I have received the ſeeds of this from America, and from the Brazils, by the title of Wild Plantain. The flower-ſtalks of this ſort riſe more than ſix feet high. The leaves are very large, and thoſe near the root have long foot-ſtalks. The flowers are produced in larger ſpikes than thoſe of the former ſort, and are of a much brighter ſcarlet. The ſeed-veſſels are longer, and the ſeeds larger than thoſe; and theſe differences are permanent from ſeeds, ſo that I make no doubt of its being a diſtinct ſpecies.

The fourth ſort is leſs common in America than either of the former. I received the ſeeds of this from India, but have had two varieties ariſe from the ſeeds, one with a plain yellow, and the other a ſpotted flower, which I find are apt to change from one to the other, when propagated by ſeeds. This ſort hath ſhorter and rounder leaves than either of the former ſorts. The ſtalks ſeldom riſe higher than three feet, and the ſpikes of flowers are like thoſe of the firſt ſpecies, excepting the colour of the flowers.

The ſeeds of the fifth ſort I received from Carthagena in New Spain, in the year 1733, which produced very ſtrong plants the firſt year, ſome of which flowered the ſame autumn. The roots of this are much larger than either of the former ſorts, and ſtrike down ſtrong fleſhy fibres deep in the ground. The ſtalks riſe ſeven or eight feet high. The leaves are near two feet long, narrow, ſmooth, and of a ſea-green colour. The flowers are produced in ſhort thick ſpikes at the extremity, which are large, and of a pale yellow colour; the ſegments of the petal are broad, but their ſhape like thoſe of the other ſorts. The ſeed-veſſels are larger, and much longer, than thoſe of the other ſorts, but contain fewer ſeeds, which are very large. The young plants which are raiſed from ſeeds of this ſort, do more certainly flower than the old roots, or the offsets taken from them; for the roots ſend out many offsets, which will ſpread to a conſiderable diſtance where they have room, but ſeldom produce flowers; ſo that it is the beſt way to raiſe a ſucceſſion of plants from ſeeds, and to throw out the old ones after they have perfected their ſeeds.

All the ſorts are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be tranſplanted into ſeparate ſmall pots, filled with rich kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark, obſerving to ſhade them till they have taken root; after which, they ſhould have a large ſhare of free air admitted to them every day in warm weather, and be frequently refreſhed with water. As theſe plants will make great progreſs in their growth, they muſt be ſhifted into larger pots filled with the ſame ſort of earth, and part of them plunged into the hot-bed again; and the others may be placed abroad in June, with other exotic plants, in a warm ſituation. Thoſe which are placed in the hot-bed, will be ſtrong enough to flower well in the ſtove the following winter; but thoſe in the open air, will not flower before the following ſummer. Theſe may remain abroad till the beginning of October, when they muſt be removed into the ſtove, and treated in the ſame manner as the old plants; and in May, if a gentle hot-bed is made, and covered a foot thick with rich earth, and the plants turned out of the pots, planting them with their balls of earth upon the hot-bed, covering each with a bell-glaſs, which may be raiſed on one ſide every day to admit air to the plants; and as theſe advance, they muſt be gradually inured to bear the open air. With this management the plants will grow much taller, and flower ſtronger than thoſe which are kept in pots, and from theſe good ſeeds may be expected in autumn. Theſe plants will continue many years with proper management; but as young plants always flower better than the old roots, it is ſcarce worth while to continue them after they have borne good ſeeds.

The ſecond ſort, which is much hardier than either of the other, ſhould have a different treatment. The young plants of this muſt be earlier inured to the open air, where they may remain till the froſt begins; then they muſt be placed in the green-houſe, and ſhould have but little wet in winter; and the beginning of May, theſe ſhould be turned out of the pots, and planted in a warm ſouth border, in a dry ſoil, where they will thrive and produce flowers annually; but

but as there is little beauty in this ſort, a few plants for variety will be as many as moſt perſons will chooſe to keep. There is a variety of this with variegated leaves, which is preſerved in ſome gardens, and is propagated by parting the roots; but this hath little beauty, ſo is ſcarce worth cultivating.

CANELLA. See WINTERANA.

CANNABINA. See DATISCA.

CANNABIS [Κάννᾰβις, *Gr.*] Lin. Gen. Plant. 988. Hemp.

The CHARACTERS are,

It is male and female in different plants. The male flowers have a five-leaved empalement which is concave, but have no petals; they have five ſhort hairy ſtamina, terminated by oblong ſquare ſummits. The female flowers have permanent empalements of one leaf, which are oblong and pointed. They have no petals, but a ſmall germen, ſupporting two long ſtyles, crowned by acute ſtigma; the ſmall germen afterward becomes a globular depreſſed ſeed, incloſed in the empalement.

This genus of plants is ranged in the fifth ſection of Linnæus's twenty-ſecond claſs, intitled Dicœcia Pentandria, the male and female flowers being in ſeparate plants, and the male having five ſtamina.

We have but one SPECIES of this plant, which is,

CANNABIS. Lin. Sp. Plant. 1027. Hemp. Cannabis ſativa. C. B. P. 320. *Manured Hemp.* Moſt of the old writers have applied the latter title to the female Hemp, and the male they have titled Cannabis erratica, or Wild Hemp; but as both ariſe from the ſame ſeeds, ſo they ſhould not be made different plants.

This plant is propagated in the rich fenny parts of Lincolnſhire, in great quantities, for its bark, which is uſeful for cordage, cloth, &c. and the ſeeds afford an oil, which is uſed in medicine.

Hemp is always ſown on a deep, moiſt, rich ſoil, ſuch as is found in Holland, in Lincolnſhire, and the fens in the iſle of Ely; where it is cultivated to great advantage, as it might in many other parts of England, where there is the like ſoil; but it will not thrive on clay, or ſtiff cold land: it is eſteemed very good to deſtroy weeds, which is no other way effected, but by robbing them of their nouriſhment; for it will greatly impoveriſh the land, ſo that this crop muſt not be repeated on the ſame ground.

The land on which Hemp is deſigned to be ſown, ſhould be well ploughed, and made very fine by harrowing; about the middle of April is a good ſeaſon for ſowing the ſeed: three buſhels is the uſual allowance for an acre, but two is fully ſufficient. In the choice of the ſeed, the heavieſt and brighteſt coloured ſhould be preferred; and particular care ſhould be had to the kernel of the ſeed, ſo that ſome of them ſhould be cracked to ſee if they have the germ or future plant perfect; for in ſome places the male plants are drawn out too ſoon from the female, i. e. before they have impregnated the female plants with the farina: in which caſe, though the ſeeds produced by theſe female plants may ſeem fair to the eye, yet they will not grow, as is well known by the inhabitants of Bickar, Swineſhead, and Dunnington, three pariſhes in the fens of Lincolnſhire, where Hemp is cultivated in great abundance, who have dearly bought their experience.

When the plants are come up, they ſhould be hoed out in the ſame manner as is practiſed for Turneps, leaving the plants a foot or ſixteen inches apart; obſerve alſo to cut down all the weeds, which, if well performed, and in dry weather, will deſtroy them. This crop will require a ſecond hoeing about a month or ſix weeks after the firſt, in order to deſtroy the weeds. If this be well performed, it will require no farther care; for the Hemp will ſoon after cover the ground, and prevent the growth of weeds.

The firſt ſeaſon for pulling the Hemp, is uſually about the middle of Auguſt, when they begin to pull what they call the Fimble Hemp, which is the male plants; but it would be much the better method to defer this a fortnight or three weeks longer, until theſe male plants have fully ſhed their duſt, without which, the ſeeds will prove abortive, produce nothing if ſown the next year, nor will thoſe concerned in the oil-mills give any thing for them, there being only empty huſks, without any kernels to produce the oil. Theſe male plants begin to decay ſoon after they have ſhed their farina.

The ſecond pulling is a little after Michaelmas, when the ſeeds are ripe: this is uſually called Karle Hemp, it is the female plants which were left at the time when the male were pulled. This Karle Hemp is bound in bundles of a yard compaſs, according to ſtatute meaſure, which are laid in the ſun for a few days to dry; and then it is ſtacked up, or houſed to keep it dry, till the ſeed can be threſhed out. An acre of Hemp on a rich ſoil, will produce near three quarters of ſeed, which, together with the unwrought Hemp, is worth from ſix to eight pounds.

Of late years the inhabitants of the Britiſh colonies in North America, have cultivated this uſeful plant, and a bounty was granted by parliament for the Hemp, which was imported from thence; but whether the inhabitants of thoſe colonies grew tired of cultivating it, or the bounty was not regularly paid, I cannot ſay; but whatever has been the cauſe, the quantity imported has by no means anſwered the expectation of the public, which is greatly to be lamented; becauſe, as this commodity is ſo eſſential to the marine, which ſhould be the principal object of this kingdom, the being furniſhed with it from our own plantations, will not only ſave the ready money paid for it, but ſecure to the country an ample ſupply at all times, without being obliged to our neighbours for it.

CANNACORUS. See CANNA.

CAPERS. See CAPPARIS.

CAPILLAMENTS [*Capillamenta, Lat.*] the ſtrings or threads about the roots of plants.

CAPILLARY plants, [of *Capillaris, Lat.* of, or like hair,] are ſuch plants as have no main ſtem, but the leaves ariſe from the root upon pedicles, and produce their ſeeds on the back of their leaves, as the Fern, Maiden Hair, &c.

CAPITULUM; i. e. a little head; the head or top of any flowering plant.

CAPNOIDES. } See FUMARIA.
CAPNORCHIS. }

CAPPARIS. Lin. Gen. Plant. 567. The Caper Buſh.

The CHARACTERS are,

The empalement is compoſed of three oval concave leaves; the flower hath four large roundiſh petals, which are indented at the top, and ſpread open; it hath a great number of ſlender ſtamina, which are as long as the petals, terminated by ſingle ſummits. In the midſt of theſe ariſe a ſingle ſtyle longer than the ſtamina, with an oval germen, crowned by a ſhort obtuſe ſtigma. The germen afterward becomes a fleſhy turbinated capſule, with one cell, filled with kidney-ſhaped ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flower having many ſtamina and but one ſtyle.

The SPECIES are,

1. CAPPARIS (*Spinoſa*) pedunculis ſolitariis unifloris, ſtipulis ſpinoſis foliis annuis, capſulis ovalibus. Lin. Sp. 720. *Caper with one flower on each foot-ſtalk, prickly ſtipula, annual leaves, and oval fruit.* Capparis ſpinoſa, fructu minore, folio rotundo. C. B. P. 480.
2. CAPPARIS (*Baducca*) pedunculis ſubſolitariis, foliis perſiſtentibus ovato-oblongis nudis determinate confertis. Lin. Sp. 720. *Caper with ſingle foot-ſtalks, oblong, oval, naked leaves in cluſters, which are always green.* Capparis arboreſcens Indica Baducca dicta. Raii Hiſt. 1630. *Indian Tree Caper, called Baducca.*
3. CAPPARIS (*Arboreſcens*) foliis lanceolato-ovatis perennantibus caule arboreſcenti. *Caper with oval ſpear-ſhaped leaves which continue through the year, and a tree-like ſtalk.*
4. CAPPARIS (*Cynophallophora*) pedunculis multifloris terminalibus angulatis, foliis perſiſtantibus ovalibus obtuſis.

obtuſis. Lin. Sp. 721. *Caper with angular branches terminated by foot-ſtalks, having many flowers, and evergreen, obtuſe, oval leaves.* Capparis arboreſcens Lauri foliis fructu longiſſimo. Plum. Cat. 7. *Tree Caper with Bay leaves, and the longeſt fruit.*

5. Capparis (*Racemoſis*) foliis ovatis oppoſitis perennantibus floribus racemoſis. *Caper with oval leaves placed oppoſite, which continue through the year, and flowers growing in bunches.*
6. Capparis (*Siliquoſa*) pedunculis unifloris compreſſis, foliis perſiſtentibus lanceolato-oblongis acuminatis ſubtus punctatis. Lin. Sp. 721. *Caper with compreſſed foot-ſtalks having one flower, and oblong, ſpear-ſhaped, evergreen leaves, with punctures on their under ſide.* Breynia arboreſcens, foliis ovatis utrinque acuminatis, ſiliqua toroſa longiſſima. Brown. Hiſt. Jam. 247.
7. Capparis (*Fruticoſa*) foliis lanceolatis acutis confertis perennantibus, caule fruticoſo. *Caper with pointed ſpear-ſhaped leaves growing in cluſters, which continue through the year, and a ſhrubby ſtalk.*
8. Capparis (*Confertis*) foliis lanceolatis alternis petiolis longiſſimis floribus confertis. *Caper with ſpear-ſhaped leaves placed alternate on very long foot-ſtalks, and flowers growing in cluſters.* Capparis alia arboreſcens Lauri foliis fructu oblongo ovato. Plum. Cat. 7.
9. Capparis (*Breynia*) pedunculis racemoſis, foliis perſiſtentibus oblongis, pedunculis calycibuſque tomentoſis, floribus octandris. Jacq. Amer. tab. 103. *Caper with branching foot-ſtalks, oblong evergreen leaves, flowers with eight ſtamina, whoſe foot-ſtalks and cups are woolly.*
10. Capparis (*Trifloris*) foliis lanceolatis nervoſis perennantibus pedunculis trifloris. *Caper with nervous ſpear-ſhaped leaves which continue through the year, and three flowers upon each foot-ſtalk.*

The firſt is the common Caper, whoſe full grown flower-bud is pickled, and brought to England annually from Italy, and the Mediterranean. This is a low ſhrub, which generally grows out of the joints of old walls, the fiſſures of rocks, and amongſt rubbiſh, in moſt of the warm parts of Europe: the ſtalks are ligneous, and covered with a white bark, which ſends out many lateral ſlender branches; under each of theſe are placed two ſhort crooked ſpines, between which and the branches come out the foot-ſtalk of the leaves, which are ſingle, ſhort, and ſuſtain a round, ſmooth, entire leaf; at the intermediate joints between the branches, come out the flowers upon long foot-ſtalks; before theſe expand, the bud, with the empalement, is gathered for pickling; but thoſe which are left expand in form of a ſingle Roſe, having five large, white, roundiſh, concave petals; in the middle is placed a great number of long ſtamina, ſurrounding a ſtyle, which riſes above them, and is crowned with an oval germen, which afterward becomes a capſule, filled with kidney-ſhaped ſeeds.

This ſort is cultivated upon old walls about Toulon, and in ſeveral parts of Italy. Mr. Ray obſerved it growing naturally on the walls and ruins at Rome, Sienna, and Florence.

The ſecond ſort hath a tree-like ſtem dividing into branches, which are ſmooth, having no ſpines on them; the leaves are oblong, oval, and ſmooth, which continue through the year. From the wings of the leaves come out the foot-ſtalks of the flowers, which are produced ſingly; theſe flowers are like thoſe of the former, but are much larger, as are alſo the buds.

The plants of the firſt ſort are with difficulty preſerved in England, for they delight to grow in crevices or rocks, and the joints of old walls or ruins, and always thrive beſt in an horizontal poſition; ſo that when they are planted either in pots, or the full ground, they rarely thrive, though they may be kept alive for ſome years. They are propagated by ſeeds in the warm parts of Europe, but it is very difficult to get them to grow in England. I have ſeveral times ſowed theſe ſeeds without ſucceſs, as have many other perſons; I never had raiſed any of the plants from ſeeds, excepting in the years 1738 and 1765, when I had three plants come up in an old wall, which being young and tender, were deſtroyed in the year 1740; but in the year 1765, raiſed a good number of plants from ſeeds, which were ſown the year before. There is an old plant growing out of a wall in the gardens at Cambden-Houſe, near Kenſington, which has reſiſted the cold for many years, and annually produces many flowers, but the young ſhoots of it are frequently killed to the ſtump every winter.

The roots of this plant are annually brought from Italy, by the perſons who import Orange-trees, ſome of which have been planted in walls, where they have lived a few years, but have not continued long.

The third ſort I received from Carthagena in New Spain, near which place it grows naturally. This riſes with a woody ſtem to the height of twelve or fourteen feet, ſending out many lateral branches, covered with a ruſſet bark, garniſhed with oblong oval leaves, ſtanding upon long foot-ſtalks; the flowers are produced from the ſide of the branches, ſingle, ſtanding upon long foot-ſtalks, which are like thoſe of the laſt ſort.

The fourth ſort was ſent me from Carthagena by the late Mr. Robert Millar, ſurgeon. This grows with a ſtrong upright trunk near twenty feet high, ſending out many lateral branches, garniſhed with a very white bark, and cloſely garniſhed with large, oblong, ſtiff leaves, of a thicker conſiſtence than thoſe of the common Laurel, of a ſplendid green, having ſeveral tranſverſe nerves from the midrib to the border, which are prominent on their under ſide; the flowers come out from the ſide of the branches, which are large, and the ſummits of the ſtamina are purple.

The fifth ſort was ſent me from the ſame country. This riſes with a trunk about twenty feet high, ſending out many long ſlender branches, which are covered with a brown bark, and garniſhed with leaves like thoſe of the Bay-tree, but longer, and deeply ribbed on their under ſide, ſtanding upon pretty long foot-ſtalks oppoſite. The flowers are produced upon long branching foot-ſtalks, which terminate the branches, each ſuſtaining two or three flowers, which are large, white, and are ſucceeded by pods two or three inches long, the thickneſs of a man's little finger, which are filled with large kidney-ſhaped ſeeds: theſe pods have a thick fleſhy cover.

The ſixth ſort was ſent me from Tolu in America. This riſes with a ſhrubby ſtalk to the height of eight or ten feet, ſending out many ligneous branches, covered with a reddiſh brown bark, garniſhed with oblong, ſpear-ſhaped, ſtiff leaves, having punctures on their under ſide; from the wings of the leaves ariſe the foot-ſtalks of the flowers, which are long, ſlender, and compreſſed, each of which ſuſtains a ſmall white flower, which is ſucceeded by an oval pod, containing many ſmall kidney-ſhaped ſeeds.

The ſeventh ſort riſes with a ſhrubby ſtem to the height of twelve or fourteen feet, ſending out many ſtrong lateral branches, covered with a dark brown bark, garniſhed with ſpear-ſhaped pointed leaves, placed alternately, having very ſhort foot-ſtalks; the leaves are of a thicker conſiſtence than thoſe of the Bay-tree; at the foot-ſtalk of each leaf comes out a ſingle flower, almoſt the whole length of the branches, which are ſmall, and ſtand upon ſhort foot-ſtalks; the ſummits of theſe flowers are of a purpliſh colour, but the ſtamina are white. This ſort was ſent me from Tolu.

The eighth ſort riſes with a ſhrubby ſtalk to the height of ten or twelve feet, ſending out ſlender horizontal branches, which are covered with a reddiſh bark; the joints of theſe branches are far diſtant; at each of theſe come out ſeveral leaves in cluſters, without order, ſtanding upon pretty long foot-ſtalks; they are ſix inches long, and three broad in the middle, and as thick as thoſe of the Laurel, of a ſhining green, ſmooth on their upper ſide, but have many tranſverſe ribs on their under ſide, which are prominent. I received this ſort from Tolu, with the former.

The

The ninth ſort grows naturally in moſt of the iſlands in the Weſt Indies; it hath a ſtrong woody ſtem, twenty-five or thirty feet high, dividing into many branches, covered with an Aſh-coloured bark, and garniſhed with oblong oval leaves, downy on their under ſide, but ſmooth on their upper, placed without order; the flowers are produced in looſe panicles at the extremity of the branches; theſe conſiſt of four pretty large concave petals, of a purple colour, including eight long purple ſtamina, with a very long ſtyle crowned by an obtuſe ſtigma; the germen afterward turns to an oblong fleſhy pod, containing four or five ſeeds.

The tenth ſort hath ſlender ſhrubby ſtalks, which riſe ſeven or eight feet high, ſending out many ligneous branches, garniſhed with very long, nervous, ſpear-ſhaped leaves. The flowers come out at the end of the branches, three ſtanding upon each foot-ſtalk; theſe are ſmall, white, and are ſucceeded by oval fruit.

Theſe laſt nine ſorts are natives of warm countries, ſo will not live through the winter in England, without the aſſiſtance of a ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not produce any in England; theſe muſt be ſown in ſmall pots, filled with light ſandy earth, and plunged into a hot-bed of tanners bark; which ſhould be now and then refreſhed with water, but by no means ſhould have it given in too great plenty: theſe ſeeds frequently remain in the ground a year before they vegetate, therefore the pots in which they are ſown ſhould be protected in winter; and the ſpring following muſt be plunged into a freſh hot-bed of tanners bark, which will bring up the plants if the ſeeds were good; when the plants appear they muſt have but little wet, and a good ſhare of air in warm weather; but when they are large enough to remove, they muſt be each tranſplanted into a ſeparate ſmall pot, filled with the ſame earth, and then plunged into the hot-bed again, obſerving to ſhade them until they have taken freſh root; after which they ſhould have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon. In the autumn they muſt be removed into the ſtove, and plunged into the bark-bed, where they ſhould conſtantly remain, and will require the ſame treatment as other tender exotic plants from the ſame countries; with this difference only, that they require but little water, eſpecially during the winter, for the roots of theſe plants are very ſubject to rot with wet.

If the ſeeds are brought over in their capſules, they will keep much better than without them; but theſe ſhould be ſecured from inſects, by wrapping them in Tobacco leaves which are well dried; without this precaution, the ſeeds will be deſtroyed before they arrive.

CAPER [BEAN.] See ZYGOPHYLLUM.

CAPRARIA. Lin. Gen. Plant. 686. Sweet Weed.

The CHARACTERS are,

It hath a permanent empalement of one leaf, cut into five oblong narrow ſegments, which are erect and ſtand aſunder; the flower is bell-ſhaped, of one leaf, divided at the top into five equal parts, the two upper ſtanding erect; it hath four ſtamina, which are inſerted in the baſe of the petal, and but little more than half ſo long, two of the under being ſhorter than the other, and terminated by heart-ſhaped ſummits; it hath a conical germen ſupporting a ſlender ſtyle, longer than the ſtamina, crowned by a bivalve heart-ſhaped ſtigma. The germen afterward becomes an oblong conical capſule, compreſſed at the point, having two cells, divided by a partition filled with roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

We have but one SPECIES of this genus, viz.

CAPRARIA (*Biflora*) foliis alternis floribus geminis. Jacq. tab. 15. *Capraria with alternate leaves, and foot-ſtalks with two flowers.* Capraria Curaſſavica. Par. Bat. 110.

This plant grows naturally in the warm parts of America, where it is often a troubleſome weed in the plantations; it riſes with an angular green ſtalk about a foot and a half high, ſending out branches at every joint, which ſometimes come out by pairs oppoſite, but generally there are three at a joint ſtanding round the ſtalk; the leaves are alſo placed round the branches by threes; theſe ſtand upon ſhort foot-ſtalks, are oval, hairy, and a little indented on their edges. The flowers are produced at the wings of the leaves, coming out on each ſide the ſtalk, each foot-ſtalk ſuſtaining two flowers; they are white, and ſucceeded by conical capſules compreſſed at the top, opening in two parts, and filled with ſmall ſeeds.

This plant is preſerved in botanic gardens for the ſake of variety; but as it hath no great beauty, ſo is ſeldom admitted into other gardens.

It is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring of the year, and the plants muſt be brought forward by planting them upon a ſecond hot-bed; and about the middle or latter end of June they may be tranſplanted either into pots of rich earth, or a warm border, and may then be expoſed to the open air, where they will perfect their ſeeds in autumn.

CAPREOLATE plants [of capreolus, *Lat.* the tendril of a Vine,] ſuch plants as twiſt and climb upon others, by means of tendrils.

CAPRIFOLIUM. See PERICLYMENUM.

CAPSICUM. Lin. Gen. Plant. 225. [takes its name of capſa, *Lat.* a cheſt; becauſe the ſeeds of this plant are included, as it were, in a little cheſt; or elſe of κάπτω, to bite, becauſe it is a burning pungent plant.] Guinea Pepper; in French, *Poivre d'Inde ou de Guinée.*

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, divided into five parts, which are erect. It hath but one petal, which is wheel-ſhaped, having a very ſhort tube, ſpread open above, and divided into five parts; it hath five ſmall ſtamina, terminated by oblong ſummits, which are connected. It hath an oval germen, ſupporting a ſlender ſtyle, longer than the ſtamina, and crowned by an obtuſe ſtigma. The germen afterward becomes a ſoft fruit, or capſule, of an indeterminate figure, having two or more cells, divided by intermediate partitions, to which adhere many compreſſed kidney-ſhaped ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and but one ſtyle.

The SPECIES are,

1. CAPSICUM (*Annuum*) caule herbaceo, fructu oblongo propendente. *Capſicum with an herbaceous ſtalk, and an oblong fruit hanging downward.* Capſicum ſiliquis longis propendentibus. Tourn. Inſt. 152.
2. CAPSICUM (*Cordiforme*) caule herbaceo, fructu cordiformi. *Capſicum with an herbaceous ſtalk, and an heart-ſhaped fruit.* This is the Capſicum ſiliqua propendente oblonga & cordiformi. Tourn. Inſt. 152.
3. CAPSICUM (*Tetragonum*) caule herbaceo, fructu maximo anguloſo obtuſo. *Capſicum with an herbaceous ſtalk, and a large angular obtuſe fruit.* Capſicum fructu longo, ventre tumido, per ſummum tetragono. Tourn. Inſt. 153. *Bell Pepper.*
4. CAPSICUM (*Anguloſum*) caule herbaceo, fructu cordiformi anguloſo. *Capſicum with an herbaceous ſtalk, and an angular heart-ſhaped fruit.* Capſicum ſiliquis ſurrectis cordiformibus angulatis. Tourn. Inſt. R. H. 153.
5. CAPSICUM (*Ceraſiforme*) caule herbaceo, fructu rotundo glabro. *Capſicum with an herbaceous ſtalk, and a round ſmooth fruit.* Capſicum ſiliquis ſurrectis Ceraſi forma. Tourn. Inſt. 153.
6. CAPSICUM (*Olivæforme*) caule herbaceo, fructu ovato. *Capſicum with an herbaceous ſtalk, and an oval-ſhaped fruit.* Capſicum ſiliqua olivæ forma. Tourn. Inſt. 153.

7. CAPSICUM (*Pyramidale*) caule fruticoſo foliis lineari-lanceolatis, fructu pyramidali erecto luteo. *Capſicum with a ſhrubby ſtalk, narrow ſpear-ſhaped leaves, and yellow pyramidal fruit growing upright.*
8. CAPSICUM (*Conoide*) caule fruticoſo fructu conico erecto rubro. *Capſicum with a ſhrubby ſtalk, and a conical red fruit growing erect, commonly called Hen Pepper.*
9. CAPSICUM (*Fruteſcens*) caule fruticoſo, fructu parvo pyramidali erecto. *Capſicum with a ſhrubby ſtalk, and a ſmall pyramidal fruit growing erect.* Capſicum minus fructu parvo pyramidali erecto. Sloan. Hiſt. Jam. vol. i. p. 240. *Commonly called Barberry Pepper.*
10. CAPSICUM (*Minimum*) caule fruticoſo, fructu parvo ovato erecto. *Capſicum with a ſhrubby ſtalk, and a ſmall oval fruit growing erect, commonly called Bird Pepper.*

The firſt is the common long podded Capſicum, which is frequently cultivated in the gardens; of this there is one with red, and another with yellow fruit, which only differ in the colour of their fruit, which difference is permanent; for I have cultivated both ſorts many years, and never have found them change from one to the other; but both will vary in the ſhape of their fruit and their manner of growing, ſo that the following varieties I have raiſed from the ſame ſeeds, viz.

1. CAPSICUM fructu ſurrecto oblongo. Tourn. *Capſicum with oblong fruit growing erect.*
2. CAPSICUM fructu bifido. Tourn. *Capſicum with a divided fruit.*
3. CAPSICUM ſiliquis ſurrectis & oblongis brevibus. Tourn. *Capſicum with oblong and ſhort pods growing erect.*
4. CAPSICUM fructu tereti ſpithameo. Tourn. *Capſicum with a taper fruit a ſpan long.*

Of theſe different forms I have had both the red and yellow, but neither of them have changed their colours, though they have frequently varied in their ſhape.

The ſecond ſort with heart-ſhaped fruit, is undoubtedly a different ſpecies from the firſt, and never alters toward it, though there are ſeveral varieties of this, which ariſe from the ſame ſeeds; of this there are red and yellow fruit, which do not alter in colour, though they produce the following varieties.

1. CAPSICUM ſiliqua propendente rotunda & cordiformi. Tourn. *Capſicum with round, heart-ſhaped, hanging pods.*
2. CAPSICUM ſiliqua latiore & rotundiore. Tourn. *Capſicum with a larger and rounder pod.*
3. CAPSICUM rotundo maximo. Tourn. *Capſicum with the largeſt round fruit.*
4. CAPSICUM ſiliquis ſurrectis cordiformibus. Tourn. *Capſicum with upright heart-ſhaped pods.*
5. CAPSICUM ſiliquis ſurrectis rotundis. Tourn. *Capſicum with round upright pods.*

The third ſort I have cultivated many years, and have not found it alter, nor have I ſeen any other but the red fruit of this. It is the only ſort which is proper for pickling, the ſkin of the fruit being fleſhy and tender, whereas thoſe of the other ſorts are thin and tough. The pods of this ſort are from one inch and a half, to two inches long, are very large, ſwelling, and wrinkled; flatted at the top, where they are angular, and ſometimes ſtand erect, at others grow downward. When the fruit of this are deſigned for pickling, they ſhould be gathered before they arrive to their full ſize, while their rind is tender; then they muſt be ſlit down on one ſide to get out the ſeeds, after which, they ſhould be ſoaked two or three days in ſalt and water; when they are taken out of this and drained, boiling vinegar muſt be poured on them, in a ſufficient quantity to cover them, and cloſely ſtopped down for two months; then they ſhould be boiled in the vinegar to make them green; but they want no addition of any ſort of ſpice, and are the wholeſomeſt and beſt pickle in the world.

The fourth ſort is alſo a diſtinct ſpecies from all the other: this hath broad wrinkled leaves; the fruit is alſo furrowed and wrinkled, generally growing upright, and of a beautiful ſcarlet colour: ſome of the fruit will have their tops compreſſed like a bonnet, from whence it had the name; others upon the ſame plants will be bell-ſhaped, but they never alter to any of the other ſorts. This is much tenderer than either of the former, ſo will not ripen its fruit in the open air in England; but if the plants are kept under glaſſes, without any artificial heat, they will thrive better, and produce more fruit, than in hot-beds or ſtoves.

The fifth ſort was ſent me from the Spaniſh Weſt-Indies: this doth not grow ſo tall as the other ſorts, but ſpreads near the ground. The leaves come out in cluſters, which are of a ſhining green, and ſtand on long foot-ſtalks. The fruit is round, ſmooth, of a beautiful red, and the ſize of a common Cherry. I have cultivated this ſeveral years, and have not found it change.

The ſixth ſort I received from Barbadoes: this is like the common in its ſtalk and leaves, but the fruit is oval, and about the ſize of a French Olive. I have cultivated this many years, and find it conſtantly the ſame.

Theſe ſix ſorts are annual with us, whatever they may be in their native countries, for their ſtalks decay ſoon after the fruit is ripe. They are propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring; and when the plants have ſix leaves, they ſhould be tranſplanted on another hot-bed, at four or five inches diſtance, ſhading them in the day time from the ſun, until they have taken root, after which, they muſt have a large ſhare of air admitted to them in warm weather, to prevent their drawing up weak. Toward the end of May, the plants muſt be hardened by degrees to bear the open air; and in June they ſhould be carefully taken up, preſerving as much earth about their roots as poſſible, and planted into borders of rich earth, obſerving to water them well, as alſo to ſhade them until they have taken root; after which time, they will require no other management, but to keep them clean from weeds, and in very dry ſeaſons to refreſh them three or four times a week with water. They will flower the end of June and in July, and their fruit will ripen in autumn. Theſe directions are for the culture of the common ſorts of Capſicum, which are generally planted by way of ornament. But the plants of the third ſort, which are propagated for pickling, ſhould be planted in a rich ſpot of ground, in a warm ſituation, about a foot and a half aſunder, and ſhaded till they have taken root, and afterward duly watered in dry weather; which will greatly promote their growth, and cauſe them to be more fruitful, as alſo enlarge the ſize of the fruit. By this management, there may be at leaſt two crops of fruit for pickling obtained the ſame year, provided the ſeaſon proves not too cold; but there ſhould be one plant, whoſe pods are large and forward, choſen for to ſave ſeeds; ſo the firſt fruits on this ſhould be ſuffered to remain, that they may have time to perfect their ſeeds before the froſt comes in autumn, for the early froſt generally deſtroys theſe plants. When the fruit is fully ripe, it ſhould be cut off, and hung up in a dry room till the ſpring, when the ſeeds are wanted.

The fourth, fifth, and ſixth ſorts being tender, the plants ſhould be put into pots, and placed in an old hot-bed under a deep frame, where they may have room to grow; or if they are planted in the full ground, the plants ſhould be each covered with a bell-glaſs to ſcreen them from cold. Theſe glaſſes may be ſet off every day in warm weather, and placed over them in the evening again; and at ſuch times as the weather is not favourable, the glaſſes ſhould be raiſed on the contrary ſide to the wind, to admit the freſh air. With this care, the fruit of theſe ſorts will ripen in England, which without it, rarely come to maturity, but in very warm ſeaſons.

The beauty of theſe plants is in their ripe fruit, which being of different forms and colours, intermixed with the green leaves, and white flowers at the ſame time,

do make a pretty appearance in the latter part of ſummer; when they are properly diſpoſed in the borders of the flower-garden; or if they are planted in pots, for the decoration of courts, &c. being intermixed with other annual plants, which are in beauty at the ſame ſeaſon, they will make an agreeable variety; eſpecially, if as many of the different ſhaped fruits, of both the red and yellow colours as can be procured, are propagated.

The four laſt ſorts have perennial ſhrubby ſtalks, which riſe four or five feet high; theſe are not ſo hardy as the other, therefore when the plants have been brought forward in the hot-bed, as was directed for the common ſorts, they ſhould be each planted in a pot filled with rich earth, and plunged into a very moderate hot-bed, under a deep frame, where they may have room to advance; and in warm weather, they ſhould have a large ſhare of air admitted to them, but muſt be covered with glaſſes every night, or in cold weather, and frequently watered. With this management, they will produce plenty of fruit in autumn, which ripen in winter; but they muſt be removed into the ſtove, on the firſt approach of froſt, and placed where they may have a temperate warmth, in which they will thrive better than in a greater heat; and the fruit will continue in beauty moſt part of winter, making a pretty appearance in the ſtove during that ſeaſon.

The ſeeds of the ſeventh ſort I received from Egypt: the leaves of this are much narrower than thoſe of any other ſort I have yet ſeen; the pods always grow erect, and are produced in great plenty, ſo that the plants make a good appearance for three months in the winter, and they may be preſerved two or three years; but as the young plants are the moſt fruitful, ſo few perſons preſerve the old longer, than till they have perfected their fruit, when they begin to loſe their beauty. I have cultivated this ſort ſeveral years, and have never found it vary, ſo conclude it is a diſtinct ſpecies.

The eighth ſort I received from Antigua, by the title of Hen Pepper. This riſes with a ſhrubby ſtalk three or four feet high, ſending out many branches toward the top: the fruit is about half an inch long, ſhaped in form of an obtuſe cone, and of a bright red, growing erect. This ripens its fruit in winter, when it makes a pretty appearance.

The ninth ſort grows about the ſame height as the eighth, but differs from it in the ſhape and ſize of the fruit: thoſe of this ſort being about the bigneſs of a Barberry, and nearly of the ſame ſhape. This I have long cultivated, and have not obſerved it to alter.

The tenth ſort is commonly known by the title of Bird Pepper in America. This riſes with a ſhrubby ſtalk four or five feet high: the leaves are broad, and rounder at the ends than thoſe of the other ſorts, and of a lucid green: the fruit grows at the diviſions of the branches, ſtanding erect: theſe are ſmall, oval, and of a bright red; they are much more ſharp and biting than thoſe of the other ſorts. From the fruit of this ſort is made the Cayan butter, or what the inhabitants of America call Pepper-pots, which they eſteem as the beſt of all the ſpices. The following is a receipt for making a Pepper-pot: take of the ripe pods of this ſort of Capſicum, and dry them well in the ſun, then put them into an earthen or ſtone pot, mixing flour between every ſtrata of pods, and put them into an oven after the baking of bread, that they may be thoroughly dried; after which, they muſt be well cleanſed from the flour, and if any of the ſtalks remain to the pods, they ſhould be taken off, and the pods beaten, or ground to fine powder; to every ounce of this, add a pound of Wheat flour, and as much leaven as is ſufficient for the quantity intended; after this has been properly mixed and wrought, it ſhould be made into ſmall cakes, and baked in the ſame manner as common cakes of the ſame ſize; then cut them into ſmall parts, and bake them again, that they may be as dry and hard as biſcuit, which, beaten into fine powder and ſifted, may be kept for uſe. This may be uſed as the common Pepper, to ſeaſon meat or broth, or for any of the purpoſes that the ordinary Pepper is uſed: it gives a better reliſh to meat or ſauce, and is found of excellent uſe to break and diſcuſs the wind, both in the ſtomach and the guts; therefore is very proper ſauce for ſuch meats as are flatulent and windy, or that breed much moiſture or crudity. A ſcruple of this powder put into chicken or veal broth, is greatly commended for comforting cold ſtomachs, or diſpelling of phlegm or viſcous humours, and helping digeſtion.

Moſt of the ſorts of Capſicum are natives of both the Indies; but they have been brought to Europe from America, where they abound in all the Caribbee iſlands, and are by the inhabitants greatly uſed in all their ſauces; but eſpecially by the negroes, who are great devourers of them; from whence it had the appellation of Negro Pepper, and probably the title of Guinea Pepper may have been applied to it for the ſame reaſon. In Spain and Portugal theſe fruit are much cultivated, where they are uſed for the ſame purpoſes as in America; but in England, they are chiefly cultivated for ornament, being rarely uſed for ſauce, or in medicine; though it is much uſed in both, in ſeveral other countries.

If the ripe pods of Capſicum are thrown into the fire, they will raiſe ſtrong and noiſome vapours, which occaſion vehement ſneezing and coughing, and often vomiting, in thoſe who are near the place, or in the room where they are burnt. Some perſons have mixed the powder of the pods with ſnuff, to give to others for diverſion; but where it is in quantity, there may be danger in uſing it, for it will occaſion ſuch violent fits of ſneezing, as to break the blood-veſſels of the head, as I have obſerved in ſome to whom it has been given.

CAPSULATE pods [of capſula, *Lat.* a cheſt] are little, ſhort, dry ſeed-veſſels of plants.

CAPSULATED plants, are ſuch as produce their ſeeds in ſhort dry pods or huſks.

CARACALLA. See PHASEOLUS.

CARAGANA. See OROBUS.

CARDAMINDUM. See TROPÆOLUM.

CARDAMINE. Lin. Gen. Plant. 727. [takes its name of Cardamum, which is called Naſturtium; hence it is a ſmall ſpecies of Naſturtium,] in Engliſh, Ladies Smock.

The CHARACTERS are,

The empalement is compoſed of four oval oblong leaves. The flower hath four oblong petals, placed in form of a croſs, which at their baſe are erect, but ſpread open above, and are much larger than the empalement; it hath ſix ſtamina, four of which are the length of the empalement; the other two, which are oppoſite, are much longer: theſe are terminated by oblong, heart-ſhaped, erect ſummits. It hath a ſlender cylindrical germen, as long as the ſtamina, having no ſtyle, but is crowned by an obtuſe ſtigma. The germen afterward turns to a long, compreſſed, cylindrical pod, with two cells, opening in two valves which twiſt ſpirally, and caſt out the ſeeds when ripe, by their elaſticity.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliquoſa; the flowers of this claſs have ſix ſtamina, four of which are ſhort, and two are longer, ſtanding oppoſite, and the ſeeds are included in long pods.

The SPECIES are,

1. CARDAMINE (*Pratenſis*) foliis pinnatis, foliolis radicalibus ſubrotundis, caulinis lanceolatis. Lin. Sp. Plant. 656. *Ladies Smock with winged leaves, whoſe lobes at bottom are roundiſh, but thoſe on the ſtalks are ſpear-ſhaped.* Cardamine pratenſis magno flore purpuraſcente. Tourn. Inſt. 224.

2. CARDAMINE (*Parviflora*) foliis pinnatis, foliolis inciſis, floribus exiguis, caule erecto ramoſo. *Ladies Smock with winged leaves, cut lobes, very ſmall flowers, and an upright branching ſtalk.* Cardamina annua exiguo flore. Tourn. Inſt. R. H. 224.

3. CARDAMINE

3. CARDAMINE (*Hirſuto*) foliis pinnatis, floribus tetrandis. Hort. Cliff. 336. *Ladies Smock, or impatient Creſs with winged leaves, and flowers with four ſtamina.* Cardamine quarta. Dalechamp. Ludg.
4. CARDAMINE (*Impatiens*) foliis pinnatis inciſis ſtipulatis, floribus apetalis. Lin. Sp. 914. *Impatient Creſs with winged leaves, cut ſtipulæ, and fugacious flowers.* Cardamine pratenſis parvo flore. Tourn. Inſt. 224.
5. CARDAMINE (*Græca*) foliis pinnatis foliolis palmatis æqualibus petiolatis. Prod. Ley. 345. *Impatient Creſs with winged leaves, whoſe lobes are handed, equal, and have foot-ſtalks.* Cardamine Sicula, foliis Fumariæ. Tourn. Inſt. 225. *Sicilian impatient Creſs with Fumitory leaves.*
6. CARDAMINE (*Amara*) foliis pinnatis, foliolis ſubrotundis anguloſis. Hall. Helv. 558. *Impatient Creſs with winged leaves, whoſe lobes are roundiſh and angular.* Naſturtium aquaticum majus & amarum. C. B. P. 104.
7. CARDAMINE (*Trifolia*) foliis ternatis obtuſis, caule ſubnudo. Lin. Sp. Plant. 654. *Three-leaved impatient Creſs with a naked ſtalk.* Naſturtium Alpinum trifolium. C. B. P. 104.
8. CARDAMINE (*Bellidiſolia*) foliis ſimplicibus ovatis integerrimis petiolis longis, Flor. Lap. 206. *Impatient Creſs with ſingle, oval, entire leaves, having long foot-ſtalks.* Naſturtium Alpinum Bellidis folio minus. C. B. P. 105. *Smaller Alpine Creſs with a Daiſey leaf.*
9. CARDAMINE (*Petræa*) foliis ſimplicibus oblongis dentatis. Lin. Sp. Plant. 654. *Impatient Creſs with ſingle, oblong, indented leaves.* Naſturtium petræum. Pluk. Alm. 261. *Rock Creſs.*
10. CARDAMINE (*Chelidonia*) foliis pinnatis foliolis quinis inciſis. Lin. Sp. Plant. 655. *Impatient Creſs with winged leaves, having five lobes which are cut.* Cardamine glabra Chelidonii folio. Tourn. Inſt. 225.

The firſt ſort grows naturally in the meadows in many parts of England; it is called Cuckow Flower, and Ladies Smock. Of this there are four varieties, viz. the ſingle purple with white flowers, which are frequently intermixed in the meadows, and the double flower of both colours. The ſingle ſorts are ſeldom admitted into gardens; but as the firſt ſort ſtands in the liſt of medicinal plants, I have enumerated it. The young leaves of this plant have been gathered in the ſpring, by ſome perſons, and put into ſallads inſtead of Creſs: it is ſuppoſed to be an antiſcorbutic. The two varieties with double flowers were accidentally found growing in the meadows, and were tranſplanted into gardens, where they have been propagated. Theſe deſerve a place in ſhady moiſt borders of the flower-garden, where they will thrive, and make a pretty appearance during their continuance in flower: they are propagated by parting their roots; the beſt time for this is in autumn, when they ſhould be tranſplanted annually. They delight in a ſoft loamy ſoil, not too ſtiff, and muſt have a ſhady ſituation. This flowers in May, and in cool ſeaſons will continue part of June.

The ſeventh, eighth, and tenth ſorts, grow naturally on the Alps, and other mountainous places. I received theſe from Verona, in the neighbourhood of which place they grow naturally. Theſe are low perennial plants, which may be propagated by parting their roots in the autumn, and require a ſtrong ſoil and ſhady ſituation: they may alſo be propagated by ſeeds, which ſhould be ſown in the autumn, on a ſhady border, where they will come up ſoon after, and are never hurt by froſt, ſo will flower the following ſeaſon. Theſe varieties are preſerved in ſome gardens, but having little beauty, are ſeldom admitted into the flower-garden.

The ninth ſort is a low biennial plant, which grows naturally in ſeveral parts of England and Wales, and is preſerved in ſome gardens for the ſake of variety. It may be propagated by ſeeds, which ſhould be ſown in the autumn, upon poor light ground in an open ſituation, and will require no other care but to keep the plants clear from weeds. It flowers in June, and the ſeeds ripen in July.

The ſixth ſort grows naturally by the ſides of rivers and ditches in moſt parts of England, ſo is not admitted into gardens. There has been a variety of this found with double flowers, but it is not as yet much known. This flowers the latter end of April, and in May.

The other ſorts are low annual plants, which grow naturally in ſeveral parts of England, ſo are ſeldom admitted into gardens. Theſe have the title of Impatient Creſs, from the elaſticity of their pods, which, if touched when they are ripe, ſpring open, and caſt out their ſeeds with violence, to a conſiderable diſtance. Theſe ſorts when young, are, by the country people, eaten in ſallads, and have the flavour of the common Creſs, but milder.

Theſe plants, when once admitted into a garden, propagate in plenty; for they produce great quantities of ſeeds, which, if permitted to ſcatter, there will be a ſupply of plants, which only require to be thinned and kept clean from weeds, and will thrive beſt in the ſhade.

CARDIACA. See LEONURUS.

CARDINALS FLOWER. See RAPUNTIUM.

CARDIOSPERMUM. Lin. Gen. Plant. Heart Pea; by the inhabitants of America called Wild Parſley; by the French, *Pois de Merveille.*

The CHARACTERS are,

It hath a permanent empalement compoſed of four concave leaves. The flower has four obtuſe petals, which are alternately larger; it hath a ſmall four-leaved nectarium encompaſſing the germen, and eight ſtamina, three and three ſtanding oppoſite, the other two on each ſide; theſe are terminated by ſmall ſummits. The germen is three-cornered, and ſupports three ſhort ſtyles, crowned by ſingle ſtigma. The germen afterward becomes a roundiſh ſwollen capſule with three lobes, divided into three cells, opening at the top, each having one or two globular ſeeds, marked with a heart.

This genus of plants is ranged in the third ſection of Linnæus's eighth claſs, intitled Octandria Trigynia, the flower having eight ſtamina and three ſtyles.

The SPECIES are,

1. CARDIOSPERMUM (*Corindum*) foliis ſubtus tomentoſis. Lin. Sp. 526. *Heart Pea with woolly leaves.* Corindum folio & fructu minori. Tourn. Inſt. 431.
2. CARDIOSPERMUM (*Halicacabum*) foliis lævibus. Hort. Cliff. 150. *Heart-ſeed with ſmooth leaves.* Corindum folio ampliori, fructu majore. Tourn. Inſt. 431.

The firſt ſort riſes with a ſlender, channelled, climbing ſtalk, to the height of four of five feet, ſending out many ſide branches, garniſhed with leaves, upon very long foot-ſtalks, coming out oppoſite at the lower part of the ſtalk; but upward the leaves come out on one ſide, and the foot-ſtalk of the flower at the oppoſite; the foot-ſtalks of the leaves are divided into three, each of which ſuſtain ſmall leaves, which are again divided into three parts, that are ſharply cut on their edges, and end in ſharp points. The foot-ſtalk of the flowers are long, naked, and toward the top, divided into three ſhort ones, each ſuſtaining a ſingle flower. Immediately under theſe diviſions, comes out tendrils or claſpers, like thoſe of the Vine, but ſmaller; theſe faſten themſelves to whatever plants grow near them, and are thereby ſupported. The flowers are ſmall, white, and compoſed of four ſmall concave petals, two of which ſtanding oppoſite, are larger than the other; when theſe fall away, the germen afterward becomes a large inflated bladder, having three lobes, in each of which is contained one, two, and ſometimes three ſeeds, which are round, hard, and the ſize of ſmall Peas, each being marked with a black ſpot in ſhape of a heart.

The ſecond ſort differs from the firſt in having taller ſtalks, the leaves being firſt divided into five, and again into three parts. The foot-ſtalks are ſhorter, and the ſeeds and bladders in which they are contained are much larger, and the whole plant is ſmoother, in other reſpects they agree.

Theſe plants grow naturally in both Indies, where they climb upon whatever ſhrubs are near them, and

riſe

riſe to the height of eight or ten feet, but in England they ſeldom are much above half ſo high; they ſend out many ſide branches, which ſpread to a conſiderable diſtance every way, and, if permitted, will faſten themſelves to the plants which are near them by their ſmall tendrils, and thereby ſpread over them.

They are annual, and periſh ſoon after they have perfected their ſeeds, and being natives of hot countries, they will not thrive in England in the open air. They are propagated by ſeeds, which ſhould be ſown upon a hot-bed in the ſpring; and when the plants are two inches high, they ſhould be each tranſplanted into a pot filled with light ſandy earth, not too rich, then plunged into a very moderate hot-bed, where they muſt be carefully ſhaded until they have taken freſh root; after which they muſt have a large ſhare of air admitted to them, to prevent their being drawn up tall and weak; and when their roots have filled the pots, they ſhould be carefully ſhaken out, preſerving all the earth to their roots (for if that ſhould fall off, the plants will not ſurvive it;) then put them into pots a little larger, filling them up with the ſame light earth, and place them either under a deep frame, or behind the plants in the ſtove, where they may be ſcreened from the ſun till they are well ſettled in the pots; after which they may be removed into a glaſs-caſe, where they may have room to grow and be ſcreened from the cold of the nights, but in warm weather they will require a large ſhare of air; with this management they will flower in July, and their ſeeds will ripen in autumn.

CARDUUS. Lin. Gen. Plant. 832. Thiſtle, in French, *Chardon.*

The CHARACTERS are,

It hath a compound flower made up of many hermaphrodite florets, which are fruitful; theſe are included in one common ſcaly empalement, which is ſwollen in the middle, each ſcale ending in a ſharp ſpine; the florets are funnel-ſhaped, of one leaf, having a ſlender tube, with an erect brim, cut into five narrow ſegments; each of theſe florets have five ſhort hairy ſtamina, terminated by cylindrical ſummits, which are indented at the top. In the center is ſituated an oval germen, crowned with down, ſupporting a ſlender ſtyle, which is longer than the ſtamina, crowned with a ſingle, naked, indented ſtigma. The germen afterward becomes an oblong four-cornered ſeed, crowned with down, and incloſed by the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis; the flowers of this claſs have their ſummits connected into a cylindrical tube, but the ſtamina are ſeparate, and thoſe of this ſection have only hermaphrodite fruitful flowers.

1. CARDUUS (*Ptarmicifolia*) foliis integris ſubtus tomenſis, ſpinis ramoſis lateralibus. Prod. Leyd. 133. *Thiſtle with entire leaves, woolly on their under ſide, and branching ſpines proceeding from the ſide of the ſtalks.* Carduus humilis aculeatus, Ptarmicæ Auſtriacæ foliis. Triumf. obſ. 96.
2. CARDUUS (*Eriophorus*) foliis ſeſſilibus bifariam pinnatifidis laciniis alternis erectis, calycibus globoſis villoſis. Hort. Upſal. 249. *Thiſtle with leaves growing cloſe to the ſtalks, which are doubly pinnated, the ſegments alternately erect, and globular woolly heads.* Carduus eriocephalus. Dod. Pempt. 723. *Woolly-headed Thiſtle, called by ſome Friars Crown.*
3. CARDUUS (*Acarna*) foliis lanceolatis dentatis ciliatis decurrentibus, ſpinis marginalibus duplicibus. *Thiſtle with ſpear-ſhaped indented leaves running along the ſtalks, with hairy edges, and the ſpines double on their borders.* Acarna major caule folioſo. C. B. P. 379. *Greater Fiſh Thiſtle.*
4. CARDUUS (*Marianus*) foliis amplexicaulibus haſtato-pinnatifidis ſpinoſis, calycibus aphyllis, ſpinis canaliculatis duplicato-ſpinoſis. Gouan. Monſp. 422. *Thiſtle with prickly leaves embracing the ſtalks, empalements without leaves, and doubly armed with channelled ſpines.* Carduus Mariæ. Dalech. Hiſt. 1475. *Our Ladies Thiſtle, or Milk Thiſtle.*
5. CARDUUS (*Cirſium*) foliis lanceolatis decurrentibus denticulis inermibus, calyce ſpinoſo. Hort. Cliff. 392. *Thiſtle with ſpear-ſhaped leaves running along the ſtalks, with ſmooth indentures, and a prickly empalement.* Cirſium Anglicum. Ger. Emac. 1183. *Engliſh ſoft or gentle Thiſtle.*
6. CARDUUS (*Caſabonæ*) foliis ſeſſilibus lanceolatis integerrimis ſubtus tomentoſis, margine ſpinis ternatis. Hort. Cliff. 393. *Thiſtle with entire ſpear-ſhaped leaves growing cloſe to the ſtalks, whoſe borders are ſet with triple ſpines.* Acarna Theophraſti anguillaræ. Lob. Icon. 486. *The ſuppoſed true Fiſh Thiſtle of Theophraſtus.*

There are a great number of ſpecies more than are here enumerated, ſome of which are very troubleſome weeds in the gardens and fields, therefore are better to be kept out of both; ſo I thought it needleſs to mention them here. The few ſorts which I have here enumerated, being often preſerved in the gardens of the curious for the ſake of variety, or cultivated for uſe by ſome perſons, therefore choſe not to omit them.

The firſt ſort grows naturally in Sicily. This is an annual plant, which riſes with a channelled ſtem about a foot and a half high, ſending out ſeveral ſide branches toward the top, garniſhed with long narrow leaves like thoſe of the Auſtrian Ptarmica, which are of a deep green above, but white on their under ſide, placed alternate: juſt below the foot-ſtalk of the leaf come out ſeveral unequal yellow ſpines, and at the end of the branches the flowers are produced; theſe have very prickly empalements, under which are placed two long leaves; the flowers are purple, and ſhaped like thoſe of the common Thiſtle, but are ſmaller; theſe are ſucceeded by oblong ſmooth ſeeds, which have a long woolly down ſitting on their top. This ſort flowers in July and Auguſt, and the ſeeds ripen in September. It is propagated by ſeeds, which ſhould be ſown on a bed of light earth in the ſpring where the plants are to remain, for they do not bear tranſplanting, unleſs it is performed when they are very young; for they ſend long ſlender roots deep into the ground, which, if broken, the plant ſeldom ſurvives it. The only care they will require, is to keep them clean from weeds, and thin the plants where they are too cloſe.

The ſecond ſort grows naturally in ſeveral of the midland counties of England. This is a biennial plant, which ſends out many long leaves near the ground, having ſeveral long ſegments, placed alternate, which are joined to a winged border running on each ſide the mid-rib the whole length; theſe ſegments point upward; the under ſide of the leaves, and the margin of the midrib, are armed with long ſharp ſpines, ſtanding every way. The following ſpring, there ariſes from the center of the plant one ſtrong channelled ſtalk, four or five feet high, branching every way toward the top: the ſtalk and branches are garniſhed with the ſame ſhaped leaves as below, and each branch is terminated by a ſingle head of purple flowers, having a woolly empalement. This flowers in June and July, and the ſeeds ripen in the autumn. One or two of theſe plants may be allowed a place in ſome abject part of the garden, for its ſingularity. The ſeeds of this plant ſhould be ſown where the plants are to remain, and will require no other care but to keep them clean from weeds. The ſecond year they will flower, and then the whole plant periſhes.

The third ſort grows naturally in Spain and Portugal. This riſes ſix feet high; the leaves are long, narrow, and the edges are ſet cloſely with ſmall hairs; at every indenture of the leaves there comes out two long yellowiſh ſpines; at the end of the branches the flowers are produced from the ſide of the ſtalk, which have woolly oval empalements, cloſely armed with ſlender ſpines. The flowers are yellow, but make no great appearance, as they advance very little above the empalement. It flowers in July and Auguſt, and the ſeeds ripen in autumn. This plant may be propagated by ſeeds in the ſame

manner as the former ſort. It is called Fiſh Thiſtle, from the reſemblance which the ſpines have to the bones of fiſh.

The fourth ſort grows very common on the ſide of banks, and in waſte land in many parts of England, and is by ſome perſons blanched and dreſſed as a curious diſh. This is a biennial plant, which ſhould be ſown very thin, and when the plants are come up ſo as to be well diſtinguiſhed, the ground ſhould be hoed, to cut down all the young weeds, and the plants left about a foot and a half diſtance; and the following ſummer the ground ſhould be kept clean from weeds. In the autumn the leaves of the plants ſhould be tied up, and the earth drawn up cloſe to blanch them; when they are properly whitened, they will be fit for uſe. This is a biennial plant, which periſhes ſoon after the ſeeds are ripe.

The fifth ſort is a biennial plant, which is by ſome cultivated for medicinal uſe, and has been ſuppoſed a remedy for ſome ſort of madneſs. This may be propagated by ſeeds in the ſame manner as the ſecond ſort. It grows naturally in the northern parts of England, and flowers in June.

The ſixth ſort is ſuppoſed to be the true Fiſh Thiſtle of Theophraſtus. This is a biennial plant, which riſes with an upright ſtalk ſix feet high, garniſhed with long ſpear-ſhaped leaves, armed with triple ſpines at every indenture on their edges; at the top of the ſtalks the flowers come out in cluſters, which are of a purple colour, and are ſucceeded by ſmooth, oval, black ſeeds. It grows naturally in Sicily and the Levant. It is propagated by ſeeds as the ſecond ſort, which ſhould be ſown on a warm border, otherwiſe the plants will not live through the winter. It flowers in June, and the ſeeds ripen in autumn.

CARDUUS BENEDICTUS. See CENTAUREA.

CARDUUS FULLONUM. See DIPSACUS.

CARICA. Lin. Gen. Plant. 1000. Papaw, in French *Papaie*.

The CHARACTERS are,

It is male and female in different plants; the flowers of the male have ſcarce any empalement; they are funnel-ſhaped, and of one leaf, having a long ſlender tube, which expands at the top, where it is divided into five narrow obtuſe parts, which turn backward; it hath ten ſtamina, five of which are alternately longer than the other, and are terminated by oblong ſummits. The female flowers have a ſmall permanent empalement indented in five parts; it hath five long ſpear-ſhaped petals, which are obtuſe, and turn backward at the top; the oval germen ſupports five oblong blunt ſtigma, which are broad at the top, and crenated. The germen afterward becomes a large oblong fleſhy fruit, having five longitudinal cells, which are full of ſmall oval furrowed ſeeds, incloſed in a glutinous pulp.

This genus of plants is ranged in the ninth ſection of Linnæus's twenty-ſecond claſs, intitled Diœcia Decandria; the plants of this claſs have male and female flowers on different plants, and in this ſection the male flowers have ten ſtamina.

The SPECIES are,

1. CARICA (*Papaya*) foliorum lobis ſinuatis. Hort. Cliff. 461. *Papaw with the lobes of the leaves ſinuated.* Papaya fructu Melopeponis effigie. Plum. *Papaw with the fruit ſhaped like the Squaſh.*
2. CARICA (*Poſopoſa*) foliorum lobis integris. Hort. Cliff. 461. *Papaw with the lobes of the leaves entire.* Papaya ramoſa fructu pyriformi. Feuil. Peruv. 2. p. 52. tab. 39. *Branching Papaw with a Pear-ſhaped fruit.*

There are ſeveral varieties of the firſt ſort, which differ in the ſize and ſhape of their fruit. Plumier mentions three of the female or fruitful Papaw, beſide the male, one of which he titles Melon-ſhaped, and the other ſhaped like the fruit of the Gourd; and I have ſeen another variety in England, with a large, ſmooth, pyramidal fruit: but theſe are ſuppoſed to be accidental varieties, which ariſe from the ſame ſeeds.

This ſort riſes with a thick, ſoft, herbaceous ſtem, to the height of eighteen or twenty feet, which is naked till within two or three feet of the top, and hath marks of the veſtiges of the fallen leaves great part of its length; the leaves come out on every ſide the ſtem upon very long foot-ſtalks; thoſe which are ſituated undermoſt are almoſt horizontal, but thoſe on the top are erect: theſe leaves (in full grown plants) are very large, and divided into many parts (or lobes) which are deeply ſinuated, or cut into irregular diviſions. The whole plant abounds with a milky acrid juice, which is eſteemed good for the ringworm: the ſtem of the plant, and alſo the foot-ſtalks of the leaves, are hollow in the middle. The flowers of the male plants are produced from between the leaves on the upper part of the plant, on every ſide, which have foot-ſtalks near two feet long, at the ends of which the flowers ſtand in looſe cluſters, each having a ſeparate ſhort foot-ſtalk; theſe are of a pure white, and have an agreeable odour. They are monopetalous, having pretty long tubes, but are cut at the top into five parts, which twiſt backward like a ſcrew; ſometimes theſe are ſucceeded by ſmall fruit, about the ſize and ſhape of a Catherine Pear, which has occaſioned ſome to ſuppoſe it was a diſtinct ſpecies; but I have frequently raiſed this, and the female or fruitful ſort, from the ſame ſeeds, and in general the male flowers fall away, without any fruit ſucceeding them. The flowers of the female Papaw alſo come out between the leaves, toward the upper part of the plant, upon very ſhort foot-ſtalks, ſingly ſitting cloſe to the ſtem; they are large and bell-ſhaped, compoſed of ſix petals, which are commonly yellow, but thoſe of the pyramidal ſort, which I before mentioned, were purple: when theſe fall away, the germen ſwells to a large fleſhy fruit, the ſize of a ſmall Melon, which are of different forms; ſome are angular, and compreſſed at both ends, others are oval and globular, and ſome pyramidal; the fruit alſo abounds with the ſame acrid milky juice as the plants. This fruit, when ripe, is by the inhabitants of the Caribbee Iſlands eaten with pepper and ſugar as Melons, but are much inferior to our moſt common Melon in flavour, in its native country; but thoſe which have ripened in England were deteſtable: the only uſe I have made known of this fruit, was, when they were about half grown, to ſoak them in ſalt water, to get out the milky juice, and pickle them for Mangos, for which they have been a good ſubſtitute. Theſe plants are ſuppoſed to be natives of America, from whence they were carried to the Philippine Iſlands, and to ſeveral parts of India, where they are now pretty common. Though theſe plants have been ſuppoſed to have male flowers only in ſome plants, and female on the other, yet I have often ſeen ſmall fruit on the male plants, and have frequently had fruit on the female, whoſe ſeeds have grown as well as any I ever ſowed, though no male plants were in the ſame ſtove with them.

The ſecond ſort was found growing in a garden at Lima, by father Feuillée, and it was the only plant he ſaw of that ſort in his travels. This differs from the other, in having a branching ſtalk, the lobes or diviſions of the leaves being entire, and the fruit being ſhaped like a Pear, which he ſays were of different ſizes; that which he deſigned was about eight inches long, and three and a half thick, yellow within and without, and of a ſweet flavour. The flower, he ſays, was of a Roſe colour, and divided but into five parts.

Theſe plants being natives of hot countries, will not thrive in England, unleſs they are preſerved in a warm ſtove; where there are ſuch conveniencies, of a proper height to contain the plants, they deſerve a place as well as almoſt any of the plants which are cultivated for ornament; for when they are grown to a large ſize, they make a noble appearance with their ſtrong upright ſtems, which are garniſhed on every ſide near the top with large ſhining leaves, ſpreading out near three feet all round the ſtem: the flowers

of

of the male ſort come out in cluſters on every ſide; and the fruit of the female growing round the ſtalks between the leaves, being ſo different from any thing of European production, may intitle them to the care of the curious.

They are eaſily propagated by ſeeds, which are annually brought in plenty from the Weſt-Indies. Theſe ſhould be ſown in a hot-bed early in the ſpring, that the plants may obtain ſtrength before the autumn: when the plants are near two inches high, they ſhould be each tranſplanted into a ſeparate ſmall pot filled with a light, gentle, loamy ſoil, and plunged into a hot-bed of tanners bark, carefully ſhading them from the ſun till they have taken root; after which they muſt be treated in the ſame manner as other tender plants from the ſame country; but as theſe plants have ſoft herbaceous ſtalks, and abound with a milky juice, they muſt not have too much water, for they are frequently killed with moiſture. There ſhould alſo be great care taken when theſe plants are ſhifted from ſmall pots into larger, to preſerve the whole ball of earth to their roots; for whenever they are left bare, they rarely ſurvive it. As the plants advance in their growth, they will require larger pots, and when they are too tall to remain under frames, they muſt be placed in the tan-bed of the bark-ſtove, where they ſhould conſtantly remain, being careful not to give them much water, eſpecially during the winter ſeaſon; and in ſummer their waterings ſhould be often repeated, but given in ſmall quantities. With this management I have raiſed plants near twenty feet high in three years, which have produced their flowers and fruit in great perfection.

CARLINA. Lin. Gen. Plant. 836. The Carline Thiſtle.

The CHARACTERS are,

It hath a compound flower, made up of many hermaphrodite florets, which are fruitful; theſe are included in a common, ſwollen, ſcaly empalement; the inner ſcales are long, and placed in a circular order. The flowers are funnel-ſhaped, having a narrow tube, but are bell-ſhaped above, and cut into five parts at the brim; theſe have each five ſhort hairy ſtamina, terminated by cylindrical ſummits. In the center is ſituated a ſhort germen crowned with down, ſupporting a ſlender ſtyle the length of the ſtamina, crowned with an oblong bifid ſtigma. The germen afterward becomes a ſingle taper ſeed, crowned with a branching plumoſe down.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis, the flowers being compoſed of only hermaphrodite florets which are fruitful, whoſe ſummits are connected, and form a tube.

The SPECIES are,

1. CARLINA (*Vulgaris*) caule multifloro corymboſo, floribus terminalibus calycibus radio albis. Hort. Cliff. 395. *Carline Thiſtle with many flowers in a corymbus, which terminate the ſtalk, having white rays to the empalement.* Carlina ſylveſtris vulgaris. Cluſ. Hiſt. 2. p. 155. *Common wild Carline Thiſtle.*
2. CARLINA (*Racemoſa*) floribus ſeſſilibus, lateralibus pauciſſimis. Sauv. Meth. 293. *Carline Thiſtle with a few flowers growing cloſe to the ſide of the ſtalk.* Carlina ſylveſtris minor Hiſpanica. Cluſ. Hiſt. 2. p. 157. *Small wild Spaniſh Carline Thiſtle.*
3. CARLINA (*Acaulis*) caule unifloro flore breviore. Hort. Cliff. 395. *Carline Thiſtle with one ſhorter flower on each ſtalk.* Carlina acaulos magno flore albo. C. B. P. 380.
4. CARLINA (*Lanata*) caule multifloro lanato, calycibus radio purpureis. Lin. Sp. 1160. *Carline Thiſtle with many downy flowers on a ſtalk, which have purple rays to their empalement.* Acarna flore purpureo rubente patulo. C. B. P. 372.
5. CARLINA (*Corymboſa*) caule multifloro ſubdiviſo, floribus ſeſſilibus calycibus radio flavis. Prod. Leyd. 135. *Carline Thiſtle with many flowers on a ſtalk, which is ſubdivided, the flowers ſit cloſe on the ſtalks, and have yellow rays to their empalement.* Acarna apula umbellata. Colum. Ecphr. 27.

The firſt ſort grows naturally upon ſterile ground in moſt parts of England, ſo is rarely admitted into gardens. The others are often preſerved in botanic gardens for the ſake of variety. They grow naturally in the ſouth of France, Spain, and Italy.

They may all be propagated by ſowing their ſeeds in the ſpring on a bed of freſh undunged earth, where they are deſigned to remain; for, as they ſend forth tap roots, they will not bear tranſplanting ſo well as moſt other plants. When the plants appear above ground, they ſhould be carefully weeded; and, as they grow in ſize, they ſhould be thinned, where they are too cloſe, leaving them about ten inches or a foot aſunder. The ſecond year moſt of theſe plants will flower; but, unleſs the ſummer proves dry, they rarely produce good ſeeds in England, and moſt of them decay ſoon after they have flowered, therefore it is pretty difficult to maintain theſe plants in this country.

CARNATION. See DIANTHUS.

CARPESIUM. Lin. Gen. 948. Nodding Starwort.

The CHARACTERS are,

It hath an imbricated empalement, the outer leaves are larger, ſpreading, and reflexed, the inner are ſhorter and equal: the flower is equal and compounded; the hermaphrodite florets are funnel-ſhaped, opening at the top in five parts; theſe compoſe the diſk. The female florets are tubulous, quinquefid, cloſing together, which compoſe the border. The hermaphrodite florets have five ſhort ſtamina, crowned by cylindrical ſummits, and an oblong germen, with a ſingle ſtalk, crowned by a bifid ſtigma; the female florets have the like, and both are ſucceeded by oval naked ſeeds incloſed in the empalement.

This genus of plants is ranged in the ſecond order of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, the flowers being compoſed of female and hermaphrodite florets, which are both fruitful.

The SPECIES are,

1. CARPESIUM (*Cernuum*) floribus terminalibus. Lin. Sp. 1203. *Nodding Starwort whoſe flowers terminate the ſtalks.* After Cernuus. Col. Ecphr. 1. p. 251.
2. CARPESIUM (*Abrotanoides*) floribus lateralibus. Oſb. It. tab. 10. *Nodding Starwort whoſe flowers come from the ſide of the ſtalks.*

The firſt ſort grows naturally in Italy. It is a biennial plant, whoſe lower leaves are obtuſe, woolly, and ſoft to the touch. The flower-ſtalk riſes from the center of the plant near a foot and a half high, branching toward the top, and garniſhed with leaves of the ſame form with thoſe at bottom, but ſmaller: each of the branches are terminated by one pretty large flower of an herbaceous yellow colour, nodding on one ſide the ſtalk; theſe are compoſed of female florets which compoſe the border, and hermaphrodite florets which compoſe the diſk, both which are ſucceeded by oval naked ſeeds. This flowers in July, and the ſeeds ripen in September.

The plant is eaſily propagated by ſeeds, which may be ſown on a bed of light earth in the ſpring, and when the plants come up, if they are thinned and kept clean from weeds, they will require no other culture. The ſecond year they will flower and produce ſeeds, ſoon after which the plants decay.

The ſecond ſort grows naturally in China, and at preſent is rare in England. This hath a hard branching ſtalk, garniſhed with broad ſpear-ſhaped leaves ſlightly crenated on the edges: the flowers are thinly ſcattered on the ſide of the ſtalks and branches, where they ſit very cloſe, nodding downward; their empalements are compoſed of many ſmall leaves which ſpread open, and incloſe a great number of florets.

This may be propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted in a ſingle pot; and when the weather becomes warm, they may be expoſed, but in autumn they muſt be houſed.

CARPINUS. Lin. Gen. Plant. 952. [ſo called of carpere, *Lat.* to crop; becauſe it may be eaſily cropped, or its wood is eaſily cleft.] The Hornbeam, or Hard-beam, in French *Charme.*

The CHARACTERS are,

It hath male and female flowers, growing ſeparate on the ſame plant. The male flowers are diſpoſed in a cylindrical rope or katkin, which is looſe and ſcaly, each ſcale covering one flower, which hath no petals, but ten ſmall ſtamina, terminated by compreſſed hairy ſummits. The female flowers are diſpoſed in the ſame form, and are ſingle under each ſcale; theſe have one petal, which is ſhaped like a cup, cut into ſix parts, and two ſhort germen, each having two hairy ſtyles, crowned by a ſingle ſtigma. The katkin afterward grows large, and at the baſe of each ſcale is lodged an oval angular nut.

This genus of plants is ranged in the eighth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Polyandria, the plants of this claſs having male and female flowers growing ſeparate on the ſame tree, and thoſe of this ſection have many ſtamina.

The SPECIES are,

1. CARPINUS (*Vulgaris*) ſquamis ſtrobilorum planis. Hort. Cliff. 447. *Hornbeam with flat ſcales to the cones.* Carpinus. Dod. Pempt. 841. *Common Hornbeam.*
2. CARPINUS (*Oſtrya*) ſquamis ſtrobilorum inflatis. Hort. Cliff. 447. *Hornbeam with inflated ſcales to the cones.* Oſtrya ulmo ſimilis, fructu racemoſo lupulo ſimilis. C. B. P. 427. *The Hop Hornbeam.*
3. CARPINUS (*Orientalis*) foliis ovato-lanceolatis ſerratis ſtrobilis brevibus. *Hornbeam with oval, ſpear-ſhaped, ſawed leaves, and the ſhorteſt cones.* Carpinus Orientalis folio minori, fructu brevi. T. Cor. 40. *Eaſtern Hornbeam, with a ſmaller leaf and ſhorter fruit.*
4. CARPINUS (*Virginiana*) foliis lanceolatis acuminatis, ſtrobilis longiſſimis. *Hornbeam with pointed ſpear-ſhaped leaves, and the longeſt cones.* Carpinus Virginiana floreſcens. Pluk. *Virginia flowering Hornbeam.*

The firſt ſort is very common in many parts of England, but is rarely ſuffered to grow as a timber-tree, being generally reduced to pollards by the country people; yet where the young trees have been properly treated, they have grown to a large ſize. I have ſeen ſome of them in woods, upon a cold ſtiff clay, which have been near ſeventy feet high, with large, noble, fine ſtems, perfectly ſtrait and ſound. Of late years, this has been only conſidered as a ſhrub, and never cultivated but for under-wood in the country, and in the nurſeries to form hedges, after the French taſte; for in moſt of their great gardens, their cabinets, &c. are formed of theſe trees, as are their trelliſſes and hedges which ſurround their plantations. But ſince theſe ſort of ornaments have been almoſt baniſhed from the Engliſh gardens, there has been little demand for theſe trees in the nurſeries.

As this tree will thrive upon cold, barren, expoſed hills, and in ſuch ſituations where few other ſorts will grow, it may be cultivated to great advantage by the proprietors of ſuch lands. It will reſiſt the violence of winds better than moſt other trees, and is by no means ſlow in its growth. But where theſe are propagated for timber, they ſhould be raiſed from ſeeds, upon the ſame ſoil, and in the ſame ſituation, where they are deſigned to grow; and not brought from better land, and a warmer ſituation, as is too frequently practiſed. Nor ſhould they be propagated by layers, which is the common method where they are intended for hedges or under-wood; for which thoſe ſo raiſed will anſwer the purpoſe full as well as thoſe raiſed from ſeeds, but the latter muſt always be preferred for timber-trees.

The ſeeds of this tree ſhould be ſown in the autumn, ſoon after they are ripe; for if they are kept out of the ground till ſpring, the plants will not come up till the following year. When the plants appear, they muſt be kept very clean from weeds, and treated as other foreſt-trees; in two years time they will be fit to tranſplant, for the ſooner all trees which are deſigned for timber are planted where they are to remain, the larger they will grow, and the wood will be firmer and more durable. If theſe are not intermixed with other kind of trees, they ſhould be planted pretty cloſe; eſpecially on the outſide of the plantations, that they may protect and draw each other up: and if they are kept clean from weeds three or four years, it will greatly promote their growth, after which the plants will have obtained ſufficient ſtrength to keep down the weeds.

As the trees advance in their growth, they muſt be thinned, which ſhould be done with caution, cutting away the moſt unpromiſing plants gradually, ſo as not to let much cold air at once, to thoſe which are left, eſpecially on the borders of the plantation. For in all young plantations of timber, it is much the better method, to take away a few trees every year, where it is wanted, than, as is commonly practiſed, to let all grow till it is fit to cut as under-wood, and then cut all away, except thoſe intended for timber; whereby ſo much cold air is ſuddenly let in upon them, as to ſtop their progreſs for ſome years: but by this method a preſent advantage is gained, which is now more generally attended to, than the future profit.

The timber of this tree is very tough and flexible, and might be converted to many uſeful purpoſes, when ſuffered to grow to a proper ſize; but as they have been generally treated otherwiſe, the principal uſes it has been applied to, was for turnery ware, for which it is an excellent wood, and alſo for making mill-cogs, heads of beetles, &c. It is alſo excellent fuel. The leaves of this tree remain upon them, till the young buds in the ſpring thruſt them off, ſo they afford much ſhelter to birds in winter; and this renders them very proper to plant round the borders of other plantations in expoſed ſituations, where they will defend the other trees in winter, and thereby greatly promote their growth.

The Hop Hornbeam ſheds its leaves in winter, with the Elm, and other deciduous trees. This tree, tho' but lately much known in England, is very common in Germany, growing promiſcuouſly with the common ſort. It is alſo ſaid to grow plentifully in many parts of North America, but it is doubtful whether that is not a different ſort from this. The Hop Hornbeam is of quicker growth than the common ſort, but what the wood of that will be I do not know; for there are but few of the trees in England growing upon their own roots, moſt of them having been grafted upon the common Hornbeam, which is the uſual method of propagating them in the nurſeries; but the trees ſo raiſed are of ſhort duration, for the graft generally grows much faſter than the ſtock, ſo that in a few years there is a great diſproportion in their ſize; and where they happen to ſtand expoſed to ſtrong winds, the graft is frequently broken from the ſtock, after many years growth; for which reaſon, I would caution every perſon not to purchaſe any of theſe trees which have been ſo propagated.

The Virginian flowering Hornbeam is ſtill leſs common than the laſt, and only to be ſeen in curious gardens; it is equally as hardy as the other, and may be increaſed by layers.

This ſort will grow to the height of thirty feet, or more, and is of quicker growth than either of the former ſorts: it ſheds its leaves in autumn, about the ſame time with the Elm; and, during the time of its verdure, this tree makes a good appearance, being well clothed with leaves, which are of a deep, ſtrong, green colour, reſembling more the long-leaved Elm than the Hornbeam.

The Eaſtern Hornbeam is a tree of humble growth, rarely riſing above ten or twelve feet high in this country, ſhooting out many horizontal irregular branches, ſo cannot eaſily be trained up to a ſtem. The leaves of this ſort are much ſmaller than thoſe of the common Hornbeam, and the branches grow cloſer together, therefore may be very proper for low hedges, where they are wanted in gardens; being a very tonſile plant, it may be kept in leſs compaſs

than almoſt any deciduous tree. It is as hardy as any of the ſorts, and may be propagated in the ſame manner; but at preſent it is rare in the Engliſh nurſeries.

CARROTS. See DAUCUS.

CARTHAMUS. Lin. Gen. Plant. 838. [ſo called of καθαίρειν, *Gr.* to purge, becauſe the ſeeds of it are purging,] Baſtard Saffron, or Safflower in French; *Cartame, ou Saffran Batard.*

The CHARACTERS are,

It hath a flower compoſed of ſeveral hermaphrodite florets, included in one common ſcaly empalement. The ſcales are compoſed of many flat leaves, broad at their baſe, ending in a ſpine, and ſpread open below. The florets are funnel-ſhaped, of one leaf, cut into five equal ſegments at the top; theſe have five ſhort hairy ſtamina, terminated by cylindrical tubular ſummits; in the center is ſituated a ſhort germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by a ſingle ſtigma. The germen afterward becomes a ſingle, oblong, angular ſeed, incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Æqualis; the flowers of this ſection being compoſed of only fruitful florets, and their ſummits are connected in form of a cylindrical tube.

The SPECIES are,

1. CARTHAMUS (*Tinctorius*) foliis ovatis integris ſerrato-aculeatis. Hort. Cliff. 394. *Baſtard Saffron with oval entire leaves, which have ſpiny ſerratures.* Carthamus officinarum, flore croceo. Tourn. Inſt. 457. *Baſtard Saffron of the ſhops, with a Saffron-coloured flower.*
2. CARTHAMUS (*Lanatus*) caule piloſo ſupernè lanato, foliis inferioribus pinnatifidis, ſummis amplexicaulibus dentatis. Hort. Upſal. 251. *Carthamus with a hairy ſtalk, woolly above, the under leaves indented, and the upper embracing the ſtalk.* Atractylis lutea. C. B. P. *Yellow Diſtaff Thiſtle.*
3. CARTHAMUS (*Creticus*) caule læviuſculo, calycibus ſublanatis, floſculis ſubnovenis, foliis inferioribus lyratis, ſummis amplexicaulibus dentatis. Lin. Sp. 1163. *Carthamus with a ſmooth ſtalk, woolly empalements, generally nine florets, the under leaves lyre-ſhaped, and the upper embracing the ſtalk.* Cnicus Creticus Atractylidis folio & facie, flore leucophæo. Tourn. Cor. 33.
4. CARTHAMUS (*Tingitanus*) foliis radicalibus pinnatis, caulinis pinnatifidis, caule unifloro. Lin. Sp. 1163. *Carthamus whoſe radical leaves are winged, thoſe on the ſtalks wing-pointed, and one flower on a ſtalk.* Cnicus perennis cæruleus Tingitanus. H. L. 162. *Blue perennial Cnicus of Tangier.*
5. CARTHAMUS (*Carduncellus*) foliis caulinis linearibus pinnatis longitudine plante. Lin. Sp. Plant. 831. *Carthamus with narrow winged leaves on the ſtalks, which are as long as the plant.* Cnicus cæruleus humilis Montis Lupi. H. L. *Dwarf Cnicus of Mount Lupus with a blue flower.*
6. CARTHAMUS (*Cæruleus*) foliis lanceolatis ſpinoſo-dentatis, caule ſubunifloro. Hort. Cliff. 1163. *Carthamus with ſpear-ſhaped leaves prickly indented, and one flower on each ſtalk.* Cnicus cæruleus aſperior. C. B. P. 378. *Rougher blue Cnicus.*
7. CARTHAMUS (*Arboreſcens*) foliis enſiformibus ſinuato-dentatis. Prod. Leyd. 136. *Carthamus with ſword-ſhaped leaves which are ſinuated and indented.* Cnicus Hiſpanicus arboreſcens fœtidiſſimus. Tourn. Inſt. 451. *Stinking ſhrubby Cnicus of Spain.*
8. CARTHAMUS (*Corymboſus*) floribus umbellatis numeroſis. *Carthamus with many flowers in umbels.* Chamæleon niger umbellatus, flore cæruleo hyacinthino. C. B. P. 380. *Black umbellated Chamæleon with blue flowers.*

The firſt ſort grows naturally in Egypt, and in ſome of the warm parts of Aſia. I have frequently received the ſeeds of this from the Britiſh iſlands in America, but whether they were originally carried thither, or if it grows naturally there, I could never be rightly informed. It is at preſent cultivated in many parts of Europe, and alſo in the Levant, from whence great quantities of Safflower are annually imported to England, for dyeing and painting.

This is an annual plant, which riſes with a ſtiff ligneous ſtalk two feet and a half, or three feet high, dividing upward into many branches, which are garniſhed with oval pointed leaves, ſitting cloſe to the branches: theſe are entire, and are ſlightly ſawed on their edges, each tooth being terminated by a ſhort ſpine. The flowers grow ſingle at the extremity of each branch: the heads of flowers are large, incloſed in a ſcaly empalement; each ſcale is broad at the baſe, flat, and formed like a leaf of the plant, terminating in a ſharp ſpine. The lower part of the empalement ſpreads open, but the ſcales above cloſely embrace the florets, which ſtand out near an inch above the empalement; theſe are of a fine Saffron colour, and this is the part which is gathered for the uſes above-mentioned. When the florets decay, the germen which is ſituated in each, become ſingle, oblong, angular ſeeds, of a white colour, and have a pretty ſtrong ſhell or cover to them. It flowers in July and Auguſt, and the ſeeds ripen in autumn; but if the ſeaſon proves cold and moiſt, when the plants are in flower, there will be no good ſeeds produced; ſo that there are few ſeaſons, wherein the ſeeds of this plant do come to perfection in England.

The ſeeds of this plant are ſometimes uſed in medicine, and are accounted a pretty ſtrong cathartic, but at preſent they are ſeldom preſcribed. It is propagated by ſeeds, which ſhould be ſown in April, upon a bed of light earth: the beſt way is to ſow them in drills, drawn at two feet and a half diſtance from each other, in which the ſeeds ſhould be ſcattered thinly, for the plants muſt not ſtand nearer each other than a foot in the rows; but as ſome of the ſeeds will fail, ſo a greater quantity ſhould be ſown, as it will be eaſy to thin the plants, at the time when the ground is hoed. If the ſeeds are good, the plants will appear in leſs than a month; and in a fortnight or three weeks after, it will be proper to hoe the ground to deſtroy the weeds, and at the ſame time the plants ſhould be thinned where they are too cloſe; but at this time they ſhould not be ſeparated to their full diſtance, leſt ſome of them ſhould afterward fail; ſo that if they are now left ſix inches aſunder, there will be room enough for the plants to grow, till the next time of hoeing, when they muſt be thinned to the diſtance they are to remain for good: after this they ſhould have a third hoeing, which, if carefully performed in dry weather, will deſtroy the weeds and make the ground clean, ſo that the plants will require no farther care, till they come to flower; when, if the Safflower is intended for uſe, the florets ſhould be cut off from the flowers as they come to perfection; but this muſt be performed when they are perfectly dry, and then they ſhould be dried in a kiln, with a moderate fire, in the ſame manner as the true Saffron, which will prepare the commodity for uſe.

But if the plants are deſigned for ſeed, the flowers muſt not be gathered; for if the florets are cut off, it will render the ſeeds abortive, though they may ſwell and grow to their uſual ſize, as I have frequently experienced; yet when they are broken, there will be found nothing more than a ſhell without any kernel. And this frequently happens to be the caſe with theſe ſeeds, in wet cold ſeaſons; though in very wet years the germen will rot, and never come ſo forward as to form a ſhell.

I have been informed, that this plant was formerly cultivated in the fields in ſeveral parts of England, for the dyers uſe; and particularly in Glouceſterſhire, where the common people frequently gathered the florets, and dried them, to put into their puddings and cheeſecakes, to give them a colour; but ſome by putting it in too great quantity, gave their puddings a cathartic quality.

If this plant was ever cultivated here in great quantity, it is ſurpriſing how it came to be ſo totally neglected, as that at preſent, there are not the leaſt traces to be met with, in any part of England, of its ever having been cultivated; nor is the commodity

ſcarce known, except to thoſe who deal in it: the quantity of this which is annually conſumed in England is ſo great, as to make a very conſiderable article in trade, ſo that it might be very well worthy of the public attention; for although the ſeeds ſeldom come to perfection in England, yet theſe might be annually procured from abroad, and the plants would conſtantly produce the flower, which is the only part uſeful. A few years paſt I ſent a ſmall parcel of the ſeeds of this plant to South Carolina, where I was afterward informed it grew amazingly, for in ſix weeks after the ſeeds were ſown, the crop of Safflower was fit to cut, and the gentleman to whom the ſeeds were given, ſent ſome of the commodity to his brother in London, who was ſo kind as to ſend me a ſpecimen of it, with an account that the dyers complained of its want of colour; and upon examining it, I found the florets were drawn out of their empalements the whole length, ſo that their tails which had been included in their covers were white, and being mixed together gave the whole a pale appearance; upon this I wrote to the gentleman to deſire he would cut off the upper part of the florets with ſciſſars, which would be eaſier performed, but have heard nothing from him ſince; however, a year or two after I received a letter from his excellency Governor Lyttleton, in which he wrote that the Safflower bid fair to prove one of their great branches of commerce, but how it has turned out I have not ſince heard.

This plant is cultivated in great plenty, in ſome parts of Germany, where the ſeeds conſtantly come to perfection; and as I have obtained a ſhort account of their method of cultivation, from a curious gentleman of that country, ſo I ſhall inſert it for the benefit of thoſe who may be induced to engage in this undertaking.

The ground in which they propoſe to ſow the Carthamus, has always a double fallow given to it, firſt to deſtroy the weeds, and afterward to make it fine. They make choice of their lighteſt land, and ſuch as is clear from Couch Graſs, and other troubleſome weeds. After the land has been fallowed a ſummer and winter, in which time they give it four ploughings, and harrow it between each, to break the clods, and pulverize it: in the latter end of March they give it the laſt ploughing, when they lay it in narrow furrows of about five feet or a little more, leaving a ſpace of two feet between each: then they harrow theſe lands to make them level, and after it is finiſhed, they ſow the ſeeds in the following manner. With a ſmall plough, they draw four ſhallow furrows in each land, at near a foot and a half diſtance, into which they ſcatter the ſeeds thinly; then with a harrow, whoſe teeth are little more than one inch long, they draw the earth into the drills to cover the ſeeds; after this, they draw a roller over the ground, to ſmooth and ſettle it. When the plants are come up, ſo as to be diſtinguiſhed, they hoe the ground to deſtroy the weeds; and at this firſt operation, where the plants happen to be cloſe, they cut up the leaſt promiſing, leaving them all ſingle, at the diſtance of three or four inches; which they always ſuppoſe will be ſufficient room for their growth, till the ſecond time of hoeing, which muſt be performed in about five weeks after their firſt; in which they are guided by the growth of the weeds, for as this work is performed with a Dutch hoe, ſo they never ſuffer the weeds to grow to any ſize before they cut them; in which they judge right, for when the weeds are ſmall, one man will hoe as much ground in a day, as can be performed by three, when they are permitted to grow large; and the weeds will be more effectually deſtroyed.

They give a third hoeing to the plants, about five or ſix weeks after the ſecond; which generally makes the ground ſo clean, as to require no more cleaning, till the Carthamus is pulled up. When the plants begin to flower, and have thruſt out their florets (or thrum) to a proper length, they go over the ground once a week to gather it; and as it is from time to time gathered, it is dried in a kiln for uſe. There is uſually a ſucceſſion of flowers for ſix or ſeven weeks. After the crop is gathered, the ſtalks are pulled, and tied in bundles for fuel; and when they have been ſet up a few days to dry, they are carried off, and the ground is ploughed for Wheat; which they ſay, always ſucceeds well after this plant.

The good quality of this commodity is chiefly in the colour, which ſhould be of a bright Saffron colour, and herein that which is cultivated in England often fails; for if there happens much rain during the time the plants are in flower, it will cauſe the florets to change to a dark or dirty yellow, which will alſo befal that which is gathered when there is any moiſture remaining upon it; therefore great care muſt be taken not to gather it till the dew is quite dried off, nor ſhould it be preſſed together till it has been dried on the kiln. The manner of doing this being the ſame as for the true Saffron, I ſhall not mention it here, but deſire the reader to turn to the article Crocus, where that is fully treated.

In Spain this plant is cultivated in their gardens, as Marigolds are in England, to put into their ſoups, olios, and other diſhes, to give them a colour. The Jews alſo are very fond of this, and mix it in moſt of their viands; and it is very probable they were the perſons who firſt carried the ſeeds of this plant to America, and taught the inhabitants the uſe of it, for it is now as commonly uſed by the Engliſh there, as in any part of Europe.

This plant may be admitted to have a place in the borders of large gardens, where it will add to the variety, during the time of its continuance in flower, which is commonly two months, or ten weeks; for if the ſeeds are ſown in the beginning of April, the firſt flowers will appear in the middle of July at fartheſt; and there will be a ſucceſſion of flowers on the ſide branches, till the end of September, or in mild warm ſeaſons till the middle of October, during which time the plants will not be deſtitute of flowers; which being of a bright Saffron colour, make a pretty appearance; and if the plants are ſupported to prevent their being broken, or blown down by the wind, they will not interfere with the other flowers, becauſe theſe have a regular upright growth.

When they are cultivated for this purpoſe, the ſeeds ſhould be ſown in the places where the plants are deſigned to remain, becauſe they do not bear tranſplanting well; therefore three or four ſeeds ſhould be ſown in each patch, leſt any of them ſhould fail; and when the plants are grown ſo ſtrong as to be out of danger, the moſt promiſing in each patch ſhould be left, and the others pulled up, that they may not draw or injure thoſe which are to ſtand.

The ſecond ſort grows naturally in the ſouth of France, Spain, and Italy, where the women uſe the ſtalks of this plant for diſtaffs, from whence it had the title of Diſtaff Thiſtle. It is by ſome called Baſtard wild Saffron. The leaves of this plant are ſometimes ordered for medicine, and are ſuppoſed to have the ſame virtues as Carduus Benedictus.

This plant is annual, periſhing ſoon after the ſeeds are ripe; the lower leaves ſpread flat upon the ground; theſe are five or ſix inches long, narrow, and deeply indented on both ſides; they are hairy, and have a few ſoft ſpines on their edges; the ſtalk riſes about two feet high, covered with hairs, and garniſhed with oblong hairy leaves, which embrace the ſtalk with their baſe, and are deeply ſinuated, with ſharp thorns growing on their edges. The upper part of the ſtalk divides into many branches, which are garniſhed with leaves of the ſame form, but ſmaller. The flowers are produced at the end of the branches, having a cluſter of ſtiff, hard, prickly leaves below the ſcaly empalement, which contains many yellow hermaphrodite flowers, ſucceeded by oblong angular ſeeds. It flowers in June and July, and the ſeeds ripen in autumn. If the ſeeds of this ſort are ſown in autumn, the plants will flower early the following ſummer, ſo there will be a certainty of good ſeeds. They

may be ſown upon a bed of earth in any ſituation, and will require no other culture, but to keep them clean from weeds, and thin the plants where they are too cloſe; this being a medicinal plant, is kept in ſome gardens, but it hath little beauty.

There is a variety of this, which grows much taller, the heads are larger, and the leaves are placed cloſer upon the ſtalks. This was found by Dr. Tournefort in the Levant.

The third ſort was alſo diſcovered by Tournefort in the iſland of Crete, from whence he ſent the ſeeds to the royal garden at Paris. This differs from the former, in having a ſmooth ſtalk; the leaves are very ſtiff, deeply indented, ſmooth, and are armed with very ſtrong ſpines; the heads of flowers are oval, the florets white, and the plant grows near four feet high. This is an annual plant, which may be ſown and treated in the ſame way as the former, and flowers about the ſame time.

The fourth ſort hath a perennial root, but an annual ſtalk. This grows naturally in Spain, and was firſt brought to England from Tangier; the ſeeds of this are never perfected in England, ſo it is propagated by parting of the roots. The beſt time for tranſplanting and parting them, is about the beginning of March; they ſhould have a dry ſoil and a warm ſituation, otherwiſe they are liable to be deſtroyed in ſevere winters.

The ſtalks of this riſe about a foot and a half high, ſeldom putting out any branches, garniſhed with narrow ſpear-ſhaped leaves the whole length of the ſtalk; theſe are deeply ſawed on their edges, each of the ſerratures ending in a ſharp point. The ſtalk is terminated by one large ſcaly head of blue flowers, ſhaped like thoſe of the other ſpecies.

The fifth ſort grows naturally in the ſouth of France, Spain, and Italy. This hath a perennial root and an annual ſtalk, which riſes about ſix inches high; it is channelled, hairy, and garniſhed with long narrow leaves, ending in ſeveral ſharp ſpines; their edges are indented, each indenture ending in a ſpine. Each ſtalk is terminated by one large head of blue flowers, having a leafy empalement, compoſed of very broad ſcales, each ending in a ſharp ſpine. It flowers in June.

This ſort is difficult to propagate in England, for the roots do not put out offſets like the former, ſo is only to be raiſed from ſeeds; which do not come to perfection here, unleſs the ſeaſon proves warm and dry. This plant ſhould have a dry ſoil and a warm ſituation.

The ſixth ſort is ſuppoſed by ſome, to be the ſame with the fourth, which is a great miſtake, for they are extremely different. This riſes with a ſingle ſtalk about two feet high, which is of a purpliſh colour, hairy, and channelled, cloſely garniſhed with broad ſpear-ſhaped leaves, which are ſharply ſawed on their edges, and covered with a ſhort hairy down. The ſtalk is terminated by a ſingle large head of blue flowers, having a ſcaly empalement, compoſed of two orders of leaves, the outer being broad, long, and armed with ſharp ſpines on their edges; the inner are narrow, and terminate with a ſharp thorn. It flowers in June and July, and the ſeeds ripen in autumn. This ſort may be propagated by parting of their roots, which ſhould be performed in autumn, when the leaves decay. It ſhould have a light dry ſoil, in which it will endure the cold of our winters, and continue many years. It may alſo be propagated by ſeeds, which ripen well in dry ſeaſons, but in wet ſummers the ſeeds are generally abortive; this requires no other care but to keep it clean from weeds. It grows naturally in Spain, France and Italy, on arable land.

The ſeventh ſort I received from Andaluſia, where it grows naturally in great plenty. This riſes with a ſhrubby perennial ſtalk to the height of eight or ten feet, dividing into many branches, garniſhed with pretty long ſword-ſhaped leaves, which are indented, armed with ſpines on their edges, and embrace the ſtalks with their baſe. The branches are terminated by large, ſcaly, prickly heads of yellow flowers, which come out in July, but are never ſucceeded by ſeeds in this country, ſo can only be propagated by ſide ſhoots, ſlipped from the branches in the ſpring, and planted in pots filled with light ſandy earth, and plunged into a moderate hot-bed, obſerving to ſhade them till they have taken root; then they muſt be gradually hardened, and removed into the open air, and when they have obtained ſtrength, they may be ſeparated, and ſome of them planted in a warm dry border, where they will endure the cold of our ordinary winters; but, in ſevere froſt, they are frequently deſtroyed, therefore a plant or two ſhould be kept in pots, and ſheltered in winter to preſerve the ſpecies.

The ſeeds of the eighth ſort were ſent me from Spain, where it grows naturally. This hath a perennial root but an annual ſtalk, which is ſingle, and never puts out any ſide branches; theſe are white, ſmooth, and channelled. The leaves are long, narrow, of a pale green, and cloſely armed on their edges with ſhort ſtiff ſpines, which come out double. The ſtalks are terminated by ſingle, oval, ſcaly heads of white flowers, each ſcale being terminated by a purpliſh ſpine. This ſquamous empalement is cloſely joined at the top, ſo as few of the hermaphrodite florets appear viſible above it; and this is guarded by a border of long, narrow, prickly leaves, ſurrounding the head, which riſe conſiderably above the flowers. This plant flowers in July and Auguſt, but ſeldom perfects its ſeeds in England. It ſhould be planted in a light ſoil and a warm ſituation, where it will live abroad in our ordinary winters, but in ſevere froſt it is ſometimes deſtroyed. As the ſeeds of this ſort rarely ripen in England, the only method to propagate the plant, is by parting the roots in the ſpring.

CARUM. Lin. Gen. Plant. 327. Carvi [ſo called of Κάρα, *Gr.* the head, as though good for the head; but others derive the name from Caria, where the antients found this plant.] Carui, or Carraway.

The CHARACTERS are,

It hath an umbellated flower, compoſed of ſeveral ſmall umbels, which are formed as rays to the general umbel, neither of which have any involucrum; the ſingle flowers have very ſmall empalements; each hath five heart-ſhaped obtuſe petals, turned inward at their points; it hath five hairy ſtamina the length of the petals, terminated by roundiſh ſmall ſummits. The germen is ſituated under the flower, ſupporting two ſmall ſtyles, crowned by a ſingle ſtigma. The germen afterward becomes an oblong channelled fruit, dividing into two parts, each having an oblong furrowed ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Dygynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. CARUM (*Carvi*) foliis pinnatifidis planis, umbellatis inæqualibus confertis. *Carraway with plain leaves ending with many points, and unequal umbels, growing cloſe.* Cuminum pratenſe, Carui officinarum, C. B. P. 159. *Meadow Cumin, or Carraway of the ſhops.*
2. CARUM (*Hiſpanicum*) foliis capillaribus multifidis, umbellis laxis. *Carraway with capillary multifid leaves, and looſe umbels.* Carvi Hiſpanicum, ſemine majore, & latiore. Juſſ. *Spaniſh Carraway with a larger and broader ſeed.*

The firſt ſort is the common Carraway, whoſe ſeeds are greatly uſed, not only in medicine, but alſo in the kitchen, &c. This grows naturally in ſome rich meadows in Lincolnſhire and Yorkſhire, and is ſometimes found growing in the paſtures near London. It is alſo cultivated for uſe in Eſſex, and ſome other counties.

This is a biennial plant, which riſes from ſeeds one year, flowers the next, and periſhes ſoon after the ſeeds are ripe. It hath a taper root like a Parſnep, but much ſmaller, which runs deep into the ground, and hath a ſtrong aromatic taſte, ſending out many ſmall fibres; from the root ariſes one or two ſmooth, ſolid,

ſolid, channelled ſtalks, about two feet high, garniſhed with winged leaves, having long naked foot-ſtalks, and many ſmall wings placed oppoſite on the midrib, which are compoſed of many narrow, little, plain leaves, ending in ſeveral points. The ſtalks divide upward into ſeveral ſmaller branches, each of which is terminated by an umbel, compoſed of ſix or eight ſmall ſeparate umbels or rays, which divide into ſeveral ſmall foot-ſtalks, each ſuſtaining a ſingle white flower, with five heart-ſhaped petals; the flowers of theſe ſmall umbels are cloſely joined together. After the flowers are decayed, the germen becomes an oblong channelled fruit, compoſed of two oblong channelled ſeeds, plain on one ſide, but convex on the other. It flowers in June, and the ſeeds ripen in autumn.

The beſt ſeaſon for ſowing the ſeeds of this plant is in autumn, ſoon after they are ripe, when they will more certainly grow, than thoſe ſown in the ſpring; and the plants which riſe in the autumn, generally flower the following ſeaſon, ſo that a ſummer's growth is hereby ſaved. When the plants come up, the ground ſhould be hoed to deſtroy the weeds; and where the plants are too cloſe, they muſt be thinned in the ſame manner as is practiſed for Carrots, leaving them three or four inches apart. In the following ſpring they will require to be twice more hoed, which will keep the ground clean till the ſeeds are ripe; then the ſtalks muſt be pulled up, and tied in bundles, ſetting them upright to dry, when the ſeeds may be threſhed out for uſe.

The ſecond ſort grows naturally in Spain: the ſeeds of this were ſent me from the royal garden at Paris. This plant riſes with a ſtronger ſtalk than the former, which ſeldom grows more than a foot and a half high, but is cloſely garniſhed with fine narrow leaves like thoſe of Dill; the ſtalks divide upward into many branches, each being terminated by looſe umbels of white flowers, which are ſucceeded by large broad ſeeds, having the ſame aromatic flavour as the common ſort. This is a biennial plant, and may be treated in the ſame manner as the former.

CARYOPHYLLATA. See GEUM.

CARYOPHYLLUS. Lin. Gen. 594. Caryophyllus aromaticus. Tourn. Inſt. R. H. 661. tab. 432. *The Clove-tree, or All-ſpice.*

The CHARACTERS are,

It hath a double empalement, that of the flower is of one leaf, cut into four obtuſe parts, upon which the germen is ſituated; the fruit hath another empalement, which is ſmall, and ſlightly divided into four parts, which are permanent. The flower hath four blunt petals, which are ſituated oppoſite to the inciſſures of the empalement. It hath many ſtamina, which riſe from the ſides of the empalement, terminated by roundiſh ſummits. The germen is ſituated under the flower, and is crowned by the ſmall empalement, ſupporting a ſingle upright ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a ſoft berry with two cells, each containing a ſingle kidney-ſhaped ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flower having many ſtamina and but one ſtyle.

The SPECIES are,

1. CARYOPHYLLUS (*Aromaticus*) foliis ovato-lanceolatis oppoſitis, floribus terminalibus, ſtaminibus corollâ longioribus. *The Clove-tree with oval ſpear-ſhaped leaves growing oppoſite, and flowers terminating the ſtalks, whoſe ſtamina are longer than the petals.* Caryophyllus aromaticus fructu oblongo. C. B. P. 410. *Aromatic Clove with an oblong fruit.*
2. CARYOPHYLLUS (*Pimento*) foliis lanceolatis oppoſitis, floribus racemoſis terminalibus, & axillaribus. *Clove-tree with ſpear-ſhaped leaves growing oppoſite, and flowers growing in bunches at the ends of the branches, and wings of the leaves.* Myrtus arborea aromatica foliis laurinis. Sloan. Cat. 161. *The Pimento, or All-ſpice.*
3. CARYOPHYLLUS (*Fruticoſus*) foliis lanceolatis oppoſitis, floribus geminatis alaribus. Brown. Hiſt. Jam. 248. *Clove-tree with ſpear-ſhaped leaves placed oppoſite, and flowers growing by pairs from the ſides of the ſtalks.*
4. CARYOPHYLLUS (*Cotinifolia*) foliis ovatis obtuſis oppoſitis, floribus ſparſis alaribus. *Clove-tree with oval blunt leaves placed oppoſite, and flowers growing thinly from the ſides of the branches.* Myrtus cotini folio. Plum. Cat. 19. *Myrtle with a leaf of Venice Sumach.*
5. CARYOPHYLLUS (*Racemoſus*) foliis oblongo-ovatis, emarginatis, ridigis, glabris, floribus racemoſis terminalibus. *Clove-tree with oblong oval leaves, which are ſtiff, ſmooth, and indented at the edges, and flowers growing in branches terminating the ſtalk.*

The firſt ſort grows naturally in the Moluccas, and the hotteſt parts of the world, where it riſes to the height of a common Apple-tree; but the trunk generally divides at about four or five feet from the ground into three or four large limbs, which grow erect, and are covered with a thin ſmooth bark, which adheres cloſely to the wood. Theſe limbs divide into many ſmall branches, which form a ſort of conical figure; the leaves are like thoſe of the Bay-tree, and are placed oppoſite on the branches. The flowers are produced in looſe bunches at the end of the branches, which are ſmall, white, and have a great number of ſtamina, which are much longer than the petals. The flowers are ſucceeded by oval berries, which are crowned with the empalement, divided into four parts, which ſpread flat on the top of the fruit, in which form they are brought to Europe; for it is the young fruit beaten from the trees before they are half grown, which are the Cloves uſed all over Europe.

I have not heard of any plants of this kind being in the gardens, either in England or Holland, but I choſe to mention it here, to introduce the other.

The ſecond ſort grows naturally in Jamaica, but particularly on the north ſide of that iſland, where it is found in great plenty, and is a conſiderable branch of their trade; the unripe fruit dried, being the All-ſpice ſo well known in Europe. It is now cultivated with care in many of the plantations, for the trees will thrive upon ſhallow rocky land, which is unfit for the Sugar-cane; ſo that a great advantage ariſes to the planters from thoſe lands, which would otherwiſe be of ſmall account to them.

This tree grows to the height of thirty feet or more, with a ſtrait trunk, covered with a ſmooth brown bark, dividing upward into many branches which come out oppoſite, garniſhed with oblong leaves, reſembling thoſe of the Bay-tree in form, colour, and texture, but are longer, and are placed by pairs: when theſe are bruiſed or broken, they have a very fine aromatic odour like that of the fruit. The branches grow very regular, ſo that the trees make a fine appearance, and as they retain their leaves through the year, the trees are worthy of being propagated for ornament and ſhade about the habitations of the planters. The flowers are produced in large looſe bunches from the ſide of the branches, towards their ends, each branch is alſo terminated by a larger bunch than the other; the flowers are ſmall, and of an herbaceous colour; they are male and female upon diſtinct trees. I was favoured with fine ſamples of both, and alſo a particular account of the trees, by William Williams, Eſq; of St. Anne's, on the north ſide of Jamaica, who has the greateſt number of theſe trees on his plantation of any perſon in that iſland. The male flowers have very ſmall petals, and a great number of ſtamina in each, which are of the ſame colour with the petals, terminated by oval bifid ſummits; the female flowers have no ſtamina, but an oval germen, ſituated below the flower, ſupporting a ſlender ſtyle, with a blunt ſtigma at the top. The germen afterward becomes a globular pulpy berry, including two kidney-ſhaped ſeeds. The uſual ſeaſon when theſe trees flower, is in June, July, and Auguſt.

When

When the fruit of theſe trees are deſigned for uſe, they are gathered, or beaten down from the trees a little before they arrive to their full ſize, and are ſeparated from leaves, ſtalks, or any rubbiſh which may have accidentally mixed with them; then the fruit is expoſed every day to the ſun, ſpread on cloths for ten or twelve days to dry, but removed under cover every evening to ſcreen it from the dews; when the fruit is perfectly dry, it is packed up for exportation. If the fruit is permitted to grow to maturity, the pulp, which ſurrounds the ſeeds, is ſo full of moiſture, and is ſo glutinous, as to ſtick to the fingers of thoſe who bruiſe them, therefore are unfit for thoſe uſes to which the dried fruit are applied.

It is called by ſome Jamaica Pepper, but the moſt general appellation is All-ſpice, from its reliſh and flavour, partaking of many other ſpices, and is deſervedly accounted one of the beſt; and if it was as ſcarce and difficult to procure as thoſe ſpices in the eaſt, would be much more ſought after and eſteemed: our neighbours the Dutch, who have engroſſed the ſpice trade to themſelves, have alſo been artful enough to deceive us with this of our production, by purchaſing the dried fruit of the All-ſpice in England at a low price, and grinding it to a powder, then ſelling it to us at an advanced price for powder of Cloves. This I have been credibly informed of, by an eminent merchant, through whoſe hands great quantities of this commodity have paſſed.

The Dutch have alſo drawn an oil from the fruit of this tree, which they vend for oil of Cloves. I had a ſmall phial of this oil ſent me from Jamaica, which was ſhewn to ſome of the beſt judges of drugs in London, who tried many experiments with it, and declared they thought it as good oil of Cloves as they had ſeen.

As there is ſo great an affinity between this tree and the true Clove, it might be worthy of trial, if the fruit when firſt formed, or the flowers were beaten down from the trees, and dried in the ſame manner as the eaſtern Cloves, might not anſwer the ſame purpoſe; or, at leaſt, it would be a good ſuccedaneum for that ſpice; and as it is the production of our own colonies, ſhould have proper encouragement.

This tree is propagated by ſeeds, which in the natural place of its growth is conveyed, and ſown by birds, to a great diſtance; and, it is very probable, the ſeeds paſſing through them, are rendered fitter for vegetation, than thoſe which are immediately gathered from the tree; for I have received great quantities of the berries from the gentleman before-mentioned, which were perfectly ripe and freſh, great part of which I ſowed in different ways, and communicated ſome of them to ſeveral other curious perſons, who did the ſame, but none of them have yet ſucceeded; and upon informing my friend Mr. Williams of this, he told me that a friend of his, whoſe plantation was on the ſouth ſide of Jamaica, deſired him to ſave a large quantity of the ripe berries for him to ſow on his plantation, which he accordingly did, but his friend forgot to ſend for them till near two years after; during which time, they had lain in a large heap, and had fermented, and, on ſowing thoſe berries, the plants came up with the firſt rains in great abundance; ſo that it may be of great ſervice to theſe ſeeds, either to paſs through animal bodies, or to be fermented before they are ſown.

The plants cannot be preſerved in England unleſs they are placed in a ſtove during the winter ſeaſon, but they will thrive in a moderate degree of warmth: they ſhould be planted in a ſoft light ſoil, and in winter muſt have but little water. In the ſummer they ſhould have a large ſhare of air, and in July, if the ſeaſon proves warm, they may be placed in the open air, in a warm ſheltered ſituation; but upon the approach of cold nights, they muſt be removed into the ſtove again. The expoſing of theſe plants to the open air for one month only, will be of great ſervice to clean their leaves from inſects or filth, which they are ſubject to contract, by remaining long in the ſtove; but if the ſeaſon ſhould prove very wet or cold, it will not be ſafe to truſt theſe plants long abroad; therefore their leaves ſhould be now and then waſhed with a ſponge to clean them, which will not only render them more ſightly, but alſo promote their growth. This tree is pretty difficult to propagate in England, where the ſeeds do not ripen; the only method in which this has been done, is by laying down the young branches, ſlitting them at a joint in the ſame manner as is practiſed in making layers of Carnations. If this is carefully performed, and the layers are regularly but gently watered, they will put out roots in one year; then they may be carefully ſeparated from the old plants, and each planted in a ſmall pot filled with light earth, and plunged into the tan-bed, either in the ſtove or under a frame, being careful to ſhade them until they have taken new root, after which they may be treated as the older plants. This plant, being an Evergreen, makes a fine appearance in the ſtove at all ſeaſons of the year; and their leaves having ſuch an agreeable fragrancy when rubbed, render them as worthy of a place in the ſtove, as any other tender exotic plant which is preſerved for ornament.

The third ſort grows naturally in Jamaica, from whence I received it ſome years paſt. This riſes with a divided trunk to the height of eight or ten feet, ſending out many branches, which are placed oppoſite, covered with a grey bark: the leaves come out oppoſite, which are ſhorter and rounder at their points than thoſe of the laſt ſpecies; they are alſo ſmoother, and of a firmer texture. The flowers come out from the ſide of the branches between the leaves, upon ſlender foot-ſtalks, about an inch in length, two generally ariſing from the ſame point: theſe are ſucceeded by round berries, of a brighter colour than thoſe of the former, having the empalement on their crowns. The leaves and fruit of this ſort have no aromatic flavour, ſo are not of uſe, but the characters of the flower and fruit are the ſame as in the other ſort.

This tree retains its leaves all the year, which being of a ſplendent green, make a very good appearance, when it is intermixed with other exotic plants in the ſtove; but the flowers being ſmall, and growing thinly upon the branches, do not make any great figure, ſo it is only preſerved for the beauty of its foliage. It is propagated by ſeeds, and requires the ſame treatment as the other ſort.

The fourth ſort was ſent me by the late Mr. Robert Millar, ſurgeon, from Carthagena in New Spain: this riſes with many irregular ſtems about twelve or fourteen feet high, covered with an Aſh-coloured bark, dividing into many branches upward: theſe are garniſhed with ſtiff oval leaves, placed oppoſite. The flowers are produced from the ſide of the branches, ſometimes four, five, or ſix foot-ſtalks ariſe from the ſame point; at other times, they come out ſingle, or perhaps by pairs: theſe are white, and of the ſame ſhape with thoſe of the ſecond ſort, and are ſucceeded by berries which are rounder, and, for the moſt part, contain but one kidney-ſhaped ſeed.

This ſort agrees with the ſecond in its general characters, but not in the virtues, for it hath none of the aromatic flavour, with which that abounds; but as it retains its leaves through the year, may merit a place in the ſtove, better than many other plants which are preſerved by the curious. This is propagated by ſeeds, in the ſame way as the ſecond ſort, and the plants muſt be treated in the ſame manner as thoſe.

The fifth ſort was ſent me from the iſland of Berbuda, where it riſes to the height of twenty feet; the trunk and branches are covered with a ſmooth brown bark. The branches come out by pairs; they grow erect, and are garniſhed with very ſtiff, ſmooth, lucid leaves, which are placed oppoſite, and have very ſhort foot-ſtalks. The leaves vary much in their form; ſome of them are oval, others oblong, and ſome are indented ſo deeply at their ends, as to

be almoſt heart-ſhaped. Their conſiſtence is much thicker than thoſe of the common Laurel, and their colour is a ſplendent green, with one deep midrib running through their middle, and many ſmall veins going from thence tranſverſly to their border. The flowers are produced in ſmall looſe bunches at the extremity of the branches, which have ſeveral narrow leaves intermixed with the bunches. Theſe are ſucceeded by berries of the ſame ſhape with thoſe of the ſecond ſort, but larger.

This tree is propagated by ſeeds as the other ſpecies, and deſerves a place in the ſtove, for the beauty of its evergreen leaves, which being of a thick conſiſtence, and of a ſhining green colour, make a fine appearance in the ſtove at all ſeaſons of the year; but this hath no aromatic flavour to recommend it, as hath the ſecond ſort, for which reaſon it is ſeldom noticed. I take this to be the Bay-tree, mentioned by Hughes, in the Hiſtory of Barbadoes, which he deſcribes to have no flavour; for I have ſeen plants of this ſort which were brought from Barbadoes, ſo that I ſuppoſe it grows naturally there.

As the plants of theſe ſorts do not riſe ſo readily from ſeeds in England, the beſt way to obtain them, is to get ſome perſon of ſkill in America, to take up a number of young plants, and plant them cloſe in boxes of earth, ſetting them in the ſhade till they have taken new root; then remove them into an open ſituation, where they may have time to eſtabliſh their roots before they are ſhipped for England; and in their paſſage they muſt be guarded from the ſpray of the ſea, and ſalt water, and ſhould have very little water given them; for moſt of the plants which are ſent to England, are killed in their paſſage by having too much wet. If theſe directions are obſerved, the plants may be brought in good health to England, provided they come over any time in the ſummer, that they may have time to get freſh root before the cold ſeaſon begins; and when once they are well eſtabliſhed in their roots here, they may be preſerved many years in vigour; but I have not ſeen many of the plants in flower here as yet.

CASIA. See OSYRIS.

CASSIA. Lin. Gen. Plant. 461. Caſſia, or Wild Senna.

The CHARACTERS are,

The empalement is compoſed of five concave coloured leaves; the flower hath five roundiſh concave petals, which ſpread open: it hath ten declining ſtamina, three of the lower are long, the three upper are ſhorter; the ſummits of the three lower are large, arched, beaked, and ſeparated at their points; the three upper ſtamina have very ſmall ſummits; the four ſide ſtamina have no beaks, but ſpread from the other. In the center is ſituated a long taper germen, having a ſhort ſtyle, terminated by an obtuſe ſtigma. The germen afterward becomes a long pod, divided by tranſverſe partitions, each containing one or two roundiſh ſeeds, faſtened to the margin of the upper valve.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flowers having ten ſtamina and one ſtyle.

The SPECIES are,

1. CASSIA (*Occidentalis*) foliis quinquejugis, ovato-lanceolatis, margine ſcabris, exterioribus majoribus, glandulâ baſeos petiolorum. Lin. Sp. Plant. 337. *Caſſia with leaves compoſed of five pair of oval ſpear-ſhaped lobes with rough borders, the upper lobes being the largeſt, and a ſmall gland at the baſe of the foot-ſtalk.* Senna occidentalis, odore opii viroſo, orobi Pannonici foliis mucronatis glabris. Hort. Amſt. 1. p. 51. tab. 26.
2. CASSIA (*Fruteſcens*) foliolis quinquejugatis ovatis glabris, exterioribus longioribus, caule fruticoſo. *Caſſia with leaves compoſed of five pair of ſmooth oval lobes, the upper being the longeſt, and a ſhrubby ſtalk.* Senna ſpuria Americana fruteſcens, foliis mucronatis minoribus, ſiliquis teretibus, duplici ſeminum ordine fœtus. Houſt. MSS.
3. CASSIA (*Alata*) foliolis octojugatis, ovali-oblongis, interioribus minoribus, petiolis eglanduloſis ſtipulis patulis. Hort. Cliff. 158. *Caſſia with eight pair of oblong oval lobes, the inner being the leaſt, foot-ſtalks without glands, and a ſpreading ſtipula.* Caſſia ſylveſtris fœtida, ſiliquis alatis. Plum. Cat. 18. *Wild ſtinking Caſſia with winged pods.*
4. CASSIA (*Villoſa*) foliolis trijugatis, oblongo-ovatis æqualibus villoſis, ſiliquis articulatis, caule erecto arboreo. *Caſſia with three pair of oblong, oval, hairy leaves, which are equal, jointed pods, and an upright woody ſtem.* Senna ſpuria arborea, villoſa, foliis latis mucronatis, ſiliquis articulatis. Houſt. MSS.
5. CASSIA (*Uniflora*) foliolis trijugatis, ovato-acuminatis, villoſis, floribus ſolitariis axillaribus, ſiliquis erectis. *Caſſia with three pair of lobes in each leaf, which are oval, pointed, hairy, and ſingle flowers proceeding from the ſides of the ſtalks, with upright pods.* Senna ſpuria herbacea orobi Pannonici foliis rotundioribus, flore parvo, ſiliquis erectis. Houſt. MSS.
6. CASSIA (*Marylandica*) foliis octojugis ovato-oblongis, æqualibus, glandula baſeos petiolorum. Lin. Sp. 541. *Caſſia with ſmall leaves compoſed of eight pair of oblong, oval, equal lobes, having a gland at the baſe of the foot-ſtalk.* Caſſia Marylandica pinnis foliorum oblongis, calyce floris reflexo. Mart. Cent. 1. 21.
7. CASSIA (*Bicapſulari*) foliolis trijugatis obovatis glabris, interioribus rotundioribus minoribus, glandulâ interjectâ globoſâ. Hort. Cliff. 159. *Caſſia with three pair of oval ſmooth leaves, the inner ones being rounder, ſmaller, and a globular gland placed between the leaves.* Caſſia hexaphylla, ſiliquâ bicapſulari. Plum. Cat. 18.
8. CASSIA (*Fiſtula*) foliis quinquejugatis ovatis acuminatis, petiolis eglanduloſis. Flor. Zeyl. 149. *Caſſia with five pair of oval, pointed, ſmooth lobes, and foot-ſtalks having no glands.* Caſſia fiſtula Alexandrina. C. B. P. 405. *The purging Caſſia of Alexandria, or Pudding Pipe-tree.*
9. CASSIA (*Bahamenſis*) foliolis ſexjugatis, lanceolatis, glabris, interioribus minoribus, floribus terminatricibus. *Caſſia with ſix pair of ſmooth ſpear-ſhaped lobes, the inner ones being ſmaller, and flowers terminating the ſtalk.* Caſſia Bahamenſis, pinnis foliorum mucronatis anguſtis, calyce floris non reflexo. Martyn. Cent. 1. p. 21.
10. CASSIA (*Fruticoſa*) foliolis bijugatis, ovato-lanceolatis, glabris, floribus terminalibus, ſiliquis longis teretibus, caule fruticoſo. *Caſſia with two pair of oval, ſpear-ſhaped, ſmooth lobes, flowers terminating the ſtalks, long taper pods, and a ſhrubby ſtalk.* Caſſia fruticoſa tetraphylla, ſiliquis erectis. Houſt. MSS.
11. CASSIA (*Javanica*) foliolis duodecemjugatis, oblongis, obtuſis, glabris, glandula nulla. Lin. Sp. Plant. 379. *Caſſia with twelve pair of ſmooth lobes, which have no glands.* Caſſia fiſtula Braſilania. C. B. P. 403. *Purging Caſſia of Braſil, commonly called Horſe Caſſia in America.*
12. CASSIA (*Liguſtrina*) foliolis ſeptemjugatis, oblongo-ovatis, floribus ſpicatis axillaribus, ſiliquis recurvis. *Caſſia with ſeven pair of oblong oval lobes, and ſhort ſpikes of flowers proceeding from the ſides of the ſtalks, and recurved pods.* Senna folio liguſtri. Plum. Cat. 18. *Senna with a Privet leaf.*
13. CASSIA (*Emarginata*) foliolis trijugatis, obtuſis, emarginatis, caulibus piloſis, floribus ſolitariis axillaribus petiolis longioribus. *Caſſia with three pair of obtuſe leaves, indented at the top, hairy ſtalks, flowers growing ſingly from the ſides of the ſtalks upon a long foot-ſtalk.* Senna ſpuria fruteſcens, foliorum pinnis latioribus, caulibus piloſis, ſiliquis longiſſimis pediculis inſidentibus. Houſt. MSS.
14. CASSIA (*Biflora*) foliolis quadrijugatis oblongo-ovatis, caulibus procumbentibus, floribus axillaribus pedunculis bifloris. *Caſſia with four pair of oval oblong leaves, trailing ſtalks, and flowers proceeding from the ſides of the ſtalks, two growing upon each foot-ſtalk.* Senna ſpuria minima, procumbens, foliorum pinnis ſubrotundis, caule pubeſcente. Houſt. MSS.
15. CASSIA (*Arboreſcens*) foliolis bijugatis oblongo-ovatis, ſubtus villoſis, floribus corymboſis, caule erecto arboreo. *Caſſia with two pair of oblong oval leaves, hairy on their under ſide, flowers growing in round bunches, and an erect tree-like ſtem.* Senna ſpuria tetra-

tetraphylla arborea, ſiliquis compreſſis, anguſtis, longiſſimis, pendulis. Houſt. MSS.

16. Cassia (*Flexuoſa*) foliolis multijugatis linearibus, floribus ſolitariis axillaribus, pedunculis longiſſimis. *Caſſia with many pair of narrow leaves, ſingle flowers proceeding from the ſides of the ſtalks, and very long foot-ſtalks.* Senna occidentalis, foliis herbæ mimoſæ, ſiliquâ ſingulari, floribus pediculis longioribus inſiſtentibus. Sloan. Hiſt. Jam. 2. 51.

17. Cassia (*Chamæcriſta*) foliolis multijugatis linearibus, caulibus procumbentibus, fruteſcentibus, floribus maximis ſolitariis axillaribus, ſiliquis glabris. *Caſſia with many pair of ſmall leaves, which are narrow, ſhrubby trailing ſtalks, large flowers growing ſingly from the ſides of the ſtalks, and ſmooth pods.* Senna ſpuria mimoſæ foliis, fruteſcens & procumbens, flore maximo, ſiliquis glabris. Houſt. MSS.

18. Cassia (*Pentagonia*) foliolis trijugatis ovatis, exterioribus majoribus glandulâ ſubulatâ inter inferiora. Prod. Leyd. 46. *Caſſia with three pair of ſmall oval leaves, the upper being the largeſt, and an awl-ſhaped glandule between the lower pair.* Senna ſpuria plerumque hexaphylla ſiliquâ pentagonâ alatâ. Houſt. MSS.

19. Cassia (*Racemoſa*) foliolis quinquejugatis, lanceolatis rigidis floribus racemoſis axillaribus, ſiliquis planis, caule fruticoſo. *Caſſia with five pair of ſpear-ſhaped ſtiff leaves, flowers growing in bunches from the ſides of the ſtalk, flat pods, and a ſhrubby ſtalk.*

20. Cassia (*Procumbens*) foliolis bijugatis ovatis, caulibus procumbentibus, floribus ſolitariis axillaribus, ſiliquis hirſutis. *Caſſia with two pair of ſmall oval leaves, trailing ſtalks, ſingle flowers proceeding from the ſides of the ſtalk, and hairy pods.* Senna ſpuria tetraphylla herbacea procumbens, ſiliquis hirſutis. Houſt. MSS.

21. Cassia (*Glanduloſa*) foliolis multijugatis, glandulâ petioli pedicellatâ, ſtipulis enſiformibus. Hort. Upſal. 101. *Caſſia with many pair of leaves, and the gland on the foot-ſtalk reſembling an inſect, and ſword-ſhaped ſtipulæ.* Chamæ chriſta pavonis Americana, ſiliquâ multiplici. Breyn. Cent. 64.

The firſt ſort grows naturally in moſt of the iſlands in the Weſt Indies, where it is called Stinking Weed, from its unſavoury odour. This riſes with a channelled ſtalk three or four feet high, dividing into ſeveral branches, garniſhed with winged leaves placed alternately; each of theſe is compoſed of five pair of lobes which are oval, ſpear-ſhaped, ſitting cloſe to the mid-rib, having rough edges, the lower pair of lobes being the ſmalleſt, the others enlarge to the top, which are the biggeſt; at the baſe of the foot-ſtalk is produced a ſmall protuberance, which is called a gland; this is differently ſituated in the ſeveral ſpecies of this genus. The flowers come out from the ſides of the ſtalks, two growing upon each foot-ſtalk; but the branches are terminated by looſe ſpikes of flowers, which are compoſed of five concave yellow petals, with ten declining ſtamina, ſituated round the germen and ſtyle, which becomes a ſword-ſhaped flat pod, having a border on each ſide, and is indented between each ſeed.

This is a biennial plant, which is propagated by ſeed in plenty, in the countries where it grows naturally; but in England, the ſeeds muſt be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted in a ſeparate pot, filled with light earth, and plunged into a moderate hot-bed, where they ſhould be ſhaded till they have taken freſh root; after which they ſhould have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon, and ſhould be frequently watered. When the plants have filled the pots with their roots, they ſhould be ſhifted into larger; and if they are too tall to remain in the hot-bed, they muſt be placed either in the ſtove, or a glaſs-caſe, where they may be defended from cold, but in warm weather have plenty of air. With this management the plants will flower in Auguſt, and perfect their ſeeds in October, but may be preſerved through the winter in a ſtove, where they will continue flowering a long time. In warm ſummers the plants may be placed in the open air toward the latter end of June, where they will flower very well; but theſe will not perfect their ſeeds, unleſs they are removed into the ſtove in autumn.

The ſecond ſort was ſent me from Jamaica by the late Dr. Houſtoun, who found it growing there naturally. This riſes with a ſhrubby ſtalk five or ſix feet high, ſending out many branches toward the top, garniſhed with winged leaves, compoſed of five pair of ſmall oval leaves, the upper ones being longeſt. The flowers come out from the ſide of the ſtalks, and alſo terminate the branches in looſe ſpikes; theſe are yellow, and ſhaped like thoſe of the former, but are ſmaller; the pods are long, taper, and contain two rows of ſeeds.

This plant may be preſerved three or four years in the ſtove, and will annually flower and perfect the ſeeds. It is propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and the plants muſt be treated in the ſame manner as the former ſort, with only this difference, that theſe, when they are too tall to remain longer under the frames on the hot-bed, muſt be removed into the ſtove, where they will often flower in autumn or winter, but they ſeldom perfect their ſeeds till the ſecond year.

The third ſort hath an herbaceous ſtalk, which riſes five or ſix feet high, garniſhed with long winged leaves, compoſed of eight or ten pair of large oval lobes, each being more than three inches long, and one broad, rounded at the end, where they are ſlightly indented. The flowers are produced in looſe ſpikes at the top of the ſtalk, which are large, yellow, and of the ſame ſhape with thoſe of the other ſpecies; the pods are long, taper, and have four borders or wings running longitudinally; theſe contain a double row of angular ſeeds. The whole plant hath a ſtrong fœtid odour.

This ſort ſeldom continues more than two years; it muſt be raiſed from ſeeds as the former ſorts, and placed in the tan-bed in the ſtove, being very tender, and ſhould have but little water in winter. The ſecond year the plants will flower, but they very rarely produce ſeeds in England.

The fourth ſort was ſent me from Campeachy by the late Dr. Houſtoun, who found it growing there in great plenty. This riſes with a woody ſtem to the height of fourteen or ſixteen feet, ſending out many lateral branches, garniſhed with winged leaves, compoſed of three pair of oblong, oval, hairy lobes, of equal ſize; the flowers come out in looſe bunches at the end of the branches, which are of a pale ſtraw colour, and ſmall, but ſhaped like the others; the pods are long, narrow, and jointed, each ſeed being lodged in a ſort of iſthmus; the ſeeds are oval and brown.

This may be propagated by ſeeds, which muſt be ſown upon a hot-bed, and the plants afterward treated as the former ſorts, placing them in a warm ſtove, where they will continue ſeveral years producing their flowers in ſummer, and in warm ſeaſons the ſeeds will ripen.

The fifth ſort is a low herbaceous plant, ſeldom riſing a foot high; the ſtalk is ſingle, and garniſhed with winged leaves, compoſed of three pair of oval pointed lobes, which are hairy; the flowers come out ſingle from the ſide of the ſtalks; they are of a pale yellow, and ſmall; theſe are ſucceeded by narrow taper pods two inches long, which grow upright. This plant is annual; the ſeeds muſt be ſown on a hot-bed, and the plants treated as the firſt ſort: they will flower in July, and ripen their ſeeds in autumn. This was ſent me from Campeachy by the late Dr. Houſtoun.

The ſixth ſort grows naturally in Maryland, from whence I received the ſeeds. It hath a perennial root, compoſed of a great number of black fibres; this ſends out ſeveral upright ſtalks in the ſpring, which riſe four or five feet high, garniſhed with winged leaves, compoſed of nine pair of oblong ſmooth lobes, which are equal; toward the upper part of the ſtalks the

the flowers come out from the wings of the leaves, two or three together; but the ſtalks are terminated by looſe ſpikes of pale yellow flowers, which are rarely ſucceeded by pods in England. The ſtalks decay in autumn, and riſe again in the ſpring. The roots of this ſort continue many years, and will live abroad in a warm border and a dry ſoil. The ſeeds will come up in the full ground, if ſown in April, and in autumn they may be planted into the borders where they are deſigned to remain.

The ſeventh ſort is an annual plant, which riſes a foot and a half high, with an erect herbaceous ſtalk, garniſhed with winged leaves, compoſed of three pair of oval lobes; the flowers come out ſingly from the wings of the leaves; theſe are ſmall, yellow, and of the ſame ſhape with thoſe of the other ſpecies, and are ſucceeded by taper pods, having cells containing two rows of ſeeds. It grows naturally in Jamaica, and the other ſugar iſlands.

This is propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring, and the plants afterward treated in the ſame manner as hath been directed for the firſt ſort. They flower in July, and the ſeeds ripen in October, and then the plants will decay.

The eighth ſort is the tree which produces the purging Caſſia which is uſed in medicine. It grows naturally in Alexandria, and in both Indies, where it riſes to the height of forty or fifty feet, with a large trunk, dividing into many branches, garniſhed with winged leaves, compoſed of five pair of ſpear-ſhaped lobes, which are ſmooth, having many tranſverſe nerves from the midrib to the borders; the midrib is very prominent on the under ſide; the flowers are produced in long ſpikes at the end of the branches, each ſtanding upon a pretty long foot-ſtalk; theſe are compoſed of five large concave petals, of a deep yellow colour, and are ſucceeded by cylindrical pods, which are from one to two feet long, with a dark brown woody ſhell, having a longitudinal ſeam on one ſide, divided into many cells by tranſverſe partitions, each containing one or two oval, ſmooth, compreſſed ſeeds, lodged in a ſweetiſh black pulp, which is the part uſed in medicine.

This tree is propagated by ſeeds, which may be eaſily procured from the druggiſts who import the pods for uſe; theſe muſt be ſown on a hot-bed in the ſpring, and when the plants come up, they muſt be treated in the ſame manner as the firſt ſort, during the firſt ſummer; and in autumn they muſt be removed into a ſtove, and plunged into the tan-bed: during the winter they ſhould have very little water; for as theſe trees grow naturally in dry ſandy land, moiſture is a great enemy to them, but eſpecially during that ſeaſon. In the ſummer they ſhould have a good ſhare of air admitted to them in warm weather, but they will not thrive in the open air in this country, at the warmeſt time of the year, ſo ſhould conſtantly remain in the ſtove. With proper care theſe plants will grow to the height of eight or ten feet, and produce their flowers, when they make a fine appearance.

The ninth ſort grows naturally in the Bahama Iſlands, from whence I received the ſeeds. This is an annual plant, which riſes with an upright ſtalk two feet and a half high, garniſhed with winged leaves, compoſed of ſix pair of lobes, which are ſmooth, narrow, and ſpear-ſhaped, ſtanding at wide diſtances; the flowers are collected into looſe bunches at the top of the ſtalks, which are of a pale yellow, and are ſucceeded by long compreſſed pods. It flowers in July, and the ſeeds ripen in autumn. This muſt be treated as the firſt ſort.

The tenth ſort was ſent me from La Vera Cruz, in New Spain, by the late Dr. Houſtoun. This grows upward of twenty feet high, with ſeveral trunks covered with brown bark; theſe divide into many branches upward, garniſhed with winged leaves, compoſed of two pair of lobes, which in the lower leaves are oval; but thoſe of the upper are five inches long, and two and a half broad in the middle, ſmooth, and of a light green. The flowers are produced in looſe ſpikes at the extremity of the branches, which are large, of a gold colour, and ſucceeded by taper brown pods about nine inches long, having many tranſverſe partitions, in which the ſeeds are lodged in a thin pulp.

This ſort is propagated by ſeeds, which muſt be ſown upon a hot-bed, and the plants afterward treated in the ſame manner as the eighth ſort, for the plants will not live abroad in this country in the warmeſt ſeaſon of the year; but if properly managed in the ſtove, will produce their beautiful flowers in three or four years from the ſeed.

The eleventh ſort grows in great plenty in moſt of the iſlands of the Weſt Indies. This riſes to a great magnitude, with a large trunk, dividing into many branches, garniſhed with very long winged leaves, compoſed of twelve or fourteen pair of oblong blunt lobes, which are ſmooth, of a light green, and placed near together. The flowers come out in looſe ſpikes at the end of the branches, which are of a pale Carnation colour, ſhaped like thoſe of the other ſpecies, and are ſucceeded by large cylindrical pods, divided by tranſverſe partitions into many cells, in which the ſeeds are lodged, ſurrounded with a black purging pulp. This is called Horſe Caſſia, becauſe it is generally given to horſes, and ſeldom taken by any perſons on account of its griping quality.

It is propagated by ſeeds, which ſhould be ſown, and the plants afterward treated in the ſame manner as the eighth ſort, with which management they will thrive and produce flowers in England.

The twelfth ſort was ſent me from the Havannah by the late Dr. Houſtoun. This hath an herbaceous ſtalk, which divides into many branches, riſing about three feet high, garniſhed with winged leaves, compoſed of ſeven pair of oblong oval lobes, which are rounded at the end. The flowers come out from the ſide of the branches, upon very long foot-ſtalks, diſpoſed in looſe ſpikes; theſe are of a pale yellow, and are ſucceeded by recurved pods, containing one row of compreſſed ſeeds.

This is a biennial plant, which, if brought forward early in the ſpring, will ſometimes perfect ſeeds the ſame year; but if they ſhould fail, the plants may be kept through the winter in a ſtove, as the firſt ſort, and good ſeeds may be obtained the following ſeaſon.

The thirteenth ſort riſes with ſeveral weak ſhrubby ſtalks about two feet high, cloſely garniſhed with winged leaves, compoſed of three pair of lobes, which are very narrow at their baſe, enlarging to the top, where they are blunt, and rounded with a little indenture at the point; theſe contract cloſely every evening, after the ſun has left them. The flowers come out ſingle from the ſide of the branches, ſtanding upon very long foot-ſtalks; they are of a bright yellow, and ſhaped like thoſe of the other ſpecies, and are ſucceeded by narrow flat pods, an inch and a half long. This grows plentifully in Jamaica. It is propagated by ſeeds, which muſt be ſown on a hot-bed, and managed as the other tender ſorts; it will continue two or three years, if placed in a warm ſtove.

The fourteenth ſort ſends out from the root two or three ſlender ſtalks, which trail on the ground, garniſhed with winged leaves, having four pair of ſmall roundiſh lobes, of a pale green; at the inſertion of the foot-ſtalks ariſe thoſe of the flower, which is jointed, dividing into two ſhorter at the top, ſuſtaining two ſmall yellow flowers. This grows naturally in Jamaica, from whence the ſeeds were ſent me. It is an annual plant, whoſe ſeeds muſt be ſown early in the ſpring on a hot-bed, and treated like the other kinds; but as the branches of this grow near the ground, ſo the plants may remain under a frame all the ſummer, and will flower in July; when, if the ſeaſon is warm, they muſt have have a large ſhare of air, otherwiſe the flowers will fall off, without being ſucceeded by pods; but if rightly managed, the ſeeds will ripen in autumn.

The fifteenth ſort was ſent me from La Vera Cruz, in New Spain, by the late Dr. Houſtoun. This riſes with a ſtrong upright trunk, to the height of twenty-five, or thirty feet, dividing into many branches, which are covered with an Aſh-coloured bark, garniſhed with winged leaves, having long foot-ſtalks; each being compoſed of two pair of oblong oval lobes, four inches long, and near two broad, which are ſmooth, of a dark green on their upper ſide, but paler underneath. The flowers are produced ſometimes from the ſide of the ſtalks, where they are few and ſcattering, but the ends of the branches have large round bunches of flowers, which branch out from one center; they are of a deep yellow, inclining to an Orange colour. Theſe are ſucceeded by compreſſed pods, near nine inches long, having a border on each ſide, and contain one row of oval, ſmooth, compreſſed ſeeds.

This ſort may be propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring, and when the plants come up, they will require the ſame treatment as the ſeventh ſort; with which management the plants will thrive, and produce their flowers in a few years.

The ſixteenth ſort hath very ſlender trailing ſtalks, about two feet long, garniſhed with winged leaves, ſitting cloſe to the branches, compoſed of many narrow pinnæ, like thoſe of the Senſitive Plant; the flowers come out ſingle from the ſide of the ſtalk, upon long ſlender foot-ſtalks, which are ſmall, of a bright yellow colour, ſhaped like thoſe of the other ſpecies; they are ſucceeded by ſhort flat pods, containing two or three ſeeds. This grows naturally in Jamaica. It is a biennial plant, and requires the ſame treatment as the firſt ſort.

The ſeventeenth ſort was ſent me by the late Dr. Houſtoun from La Vera Cruz, where he found it growing naturally. This riſes with ſeveral ſhrubby trailing ſtalks, which are two feet long, ſending out many ſide branches, cloſely garniſhed with winged leaves, compoſed of ſeveral pair of very narrow pinnæ, ſmaller than thoſe of the ſenſitive Plant. The flowers are produced ſingle from the ſide of the branches, on very ſhort foot-ſtalks; they are large, of a deep Orange colour, and are ſucceeded by ſhort, narrow, ſmooth pods. This plant differs much from the Chamæ criſta pavonis major, of Breynius, in having a ſhrubby trailing ſtalk; the leaves are much ſhorter, having but half the number of pinnæ, which are alſo narrower and ſhorter, the flower is alſo larger.

This plant will continue two or three years, and produce flowers annually, but it muſt be treated in the ſame manner as the other tender ſorts; for it will not thrive unleſs it is preſerved in a warm ſtove, where it will perfect ſeeds the ſecond year. It flowers in July and Auguſt, and the ſeeds ripen in autumn.

The eighteenth ſort was ſent me from Campeachy, by the late Dr. Houſtoun. This riſes with a ſhrubby ſlender ſtalk about two feet high, dividing upward into ſeveral branches, which are thinly garniſhed with winged leaves, compoſed of three pair of oval lobes, the upper being the largeſt; theſe ſtand upon long foot-ſtalks, from the baſe of which comes out the flower, ſtanding ſingle on a ſhort foot-ſtalk, of a pale yellow colour, and is ſucceeded by a bending pod, near four inches long, having five longitudinal wings, ending in a point.

It is a biennial plant, which if brought forward in the ſpring, will flower the ſame ſummer, and ſometimes perfect ſeeds in autumn; but if the plants are placed in a warm ſtove, they will live through the winter, and the following ſeaſon will flower earlier, and good ſeeds may then be obtained.

The nineteenth ſort riſes with a ſhrubby ſtalk to the height of ten or twelve feet, dividing upward into many branches, garniſhed with winged leaves, compoſed of five pair of ſtiff ſpear-ſhaped lobes; the flowers come out from the ſide of the branches, on long branching foot-ſtalks, collected into large looſe ſpikes; theſe are of a deep Orange colour, large, and ſhaped like thoſe of the other ſpecies, and are ſucceeded by flat brown pods, about four inches long, containing one row of flat, ſmooth, oval ſeeds. This ſort was ſent me from Carthagena, by the late Mr. Robert Millar.

This ſort is propagated by ſeeds in the ſame manner as the other ſpecies, and requires a warm ſtove to preſerve it, where it will thrive and produce flowers annually.

The twentieth ſort was ſent me from La Vera Cruz, by the late Dr. Houſtoun. This hath ſeveral trailing herbaceous ſtalks, about two feet long, garniſhed with winged leaves, having long foot-ſtalks, which are placed at a conſiderable diſtance from each other; they have two pair of oval ſmooth lobes. The flowers come out ſingle from the ſide of the branches, which are of a pale yellow colour, and are ſucceeded by ſhort, flat, hairy pods, containing one row of flat ſeeds.

This is an annual plant, which muſt be raiſed on a hot-bed early in the ſpring, and treated in the ſame manner as the other annual ſorts before-mentioned. It flowers in July, and the ſeeds ripen in autumn.

The twenty-firſt ſort grows common in all the iſlands of the Weſt-Indies. This riſes with a ſlender ſtalk about two feet high, ſending out a few ſide branches upward, garniſhed with winged leaves, compoſed of many pairs of narrow pinnæ, like thoſe of the Senſitive Plant. The flowers come out upon ſhort foot-ſtalks from the ſide of the branches, each foot-ſtalk ſuſtaining two or three yellow flowers, of the ſame form with the other ſpecies of this genus; theſe are ſucceeded by ſhort flat pods, containing three or four flat ſeeds in each.

This is an annual plant, and requires the ſame treatment as the laſt; but as the ſtalks of this grow upright, they will be too tall to remain under a frame all the ſummer; therefore when the plants are advanced ſo high as to be near the glaſſes, they ſhould be removed into the ſtove, or a glaſs caſe, where they may have room to grow, and be ſcreened from the cold, but in warm weather ſhould have a good ſhare of air admitted to them; with this management they will flower in July, and perfect their ſeeds in autumn.

Theſe plants are frequently preſerved in the gardens of ſeveral curious perſons, therefore I have enumerated them here, though ſeveral of them have not much beauty to recommend them, but are chiefly kept for the ſake of variety. The moſt beautiful are the fourth, the eighth, tenth, eleventh, fifteenth, and nineteenth ſorts; theſe all make a good appearance in the ſtove, eſpecially when they are in flower; and as they retain their leaves all the year, they make an agreeable variety in the winter ſeaſon, when intermixed with other plants from the ſame countries. All the ſpecies of this genus contract their leaves every evening as the ſun declines, and open them again with the riſing ſun in the morning; which is alſo common to many other plants, ſome of which turn their upper ſurface outward, but all thoſe of this genus turn their under ſurface outward, the upper being very cloſely folded together. Theſe are what Linnæus titles ſleeping plants. It muſt alſo be obſerved that moſt of thoſe plants, whoſe under ſurface is turned outward, are ſuch as grow upon dry ſandy land, where their roots do not find a ſupply of moiſture, ſo that the lower ſurface of their leaves being generally covered with a ſhort ſoft down, or hairs, detain the nightly dews, which are inhaled by the leaves, and furniſh part of their nouriſhment; whereas the other, whoſe upper ſurface is turned outward, do not ſtand in need of this ſupply; being ſmooth, the moiſture is caſt off, and not imbibed by them.

CASSIDA [i. e. an helmet,] Scull-cap. See SCUTELLARIA.

CASSINE. Lin. Gen. Plant. 333. The Caſſioberry Buſh, and South-Sea Thea.

The CHARACTERS are,

It hath a ſmall permanent empalement, which is divided into five parts; the flower hath but one petal, which is cut into five obtuſe ſegments, which ſpread open; it hath five ſtamina, which ſpread from each other, and are terminated by ſingle ſummits; it hath a conical germen, without a ſtyle, ſupporting three reflexed ſtigma. The germen afterward becomes an umbilicated berry with three cells, each containing a ſingle ſeed.

This genus of plants is ranged in the third ſection of Linnæus's fifth claſs, intitled, Pentandria Trigynia, the flower having five ſtamina, and three ſtigma.

The SPECIES are,

1. CASSINE (*Corymboſa*) foliis ovato-lanceolatis, ſerratis, oppoſitis, floribus corymboſis axillaribus. Fig. Pl. plat. 83. f. 1. *Caſſine with oval ſpear-ſhaped leaves placed oppoſite, and flowers growing in round bunches from the ſides of the branches.* Caſſine vera perquam ſimilis, arbuſcula, Phillyreæ foliis antagoniſtis, ex Provinciâ Carolinienſi. Pluk. Mant. 40. *The Caſſioberry Buſh.*
2. CASSINE (*Paragua*) foliis lanceolatis alternis ſempervirentibus, floribus axillaribus. Fig. pl. Plat. 83. f. 2. *Caſſine with evergreen ſpear-ſhaped leaves placed alternately, and flowers proceeding from the ſides of the branches.* Caſſine vera Floridanorum, arbuſculâ bacciferâ, Alaterni ferme facie, foliis alternatim ſitis tetrapyrene. Pluk. Mant. 40. *Evergreen Caſſine, Yapon, or South-Sea Thea.*
3. CASSINE (*Oppoſitifolia*) foliis ovatis acutis glabris, floribus axillaribus ſparſis. *Caſſine with oval acute leaves placed oppoſite, and flowers coming from the wings of the ſtalks, commonly called Hyſſon Tea.*

The firſt ſort riſes with two or three ſtems, which ſend out many ſide branches their whole length, and become buſhy; theſe ſeldom riſe more than eight or nine feet high. The branches are garniſhed with oval ſpear-ſhaped leaves, ſawed on their edges, which grow oppoſite. Toward the upper part of the branches the flowers come out from the ſides, growing in roundiſh bunches; theſe are white, and are divided into five parts almoſt to the bottom; in their center is placed the germen, attended by five ſtamina, which ſpread open, near as much as the ſegments of the petal. After the flower is paſt, the germen ſwells to a round berry, having three cells, each containing a ſingle ſeed. This is by Dr. Linnæus ſuppoſed to be the ſame plant as the Phillyrea Capenſis folio celaſtri. Hort. Elth. But thoſe who know both the plants, can have no doubt of their being different. The Caſſine here mentioned drops its leaves in autumn, whereas that Phillyrea is evergreen; the former lives abroad in the open air, but the latter can ſcarce be kept through the winter in a green-houſe, without artificial heat; nor have the plants the ſame appearance, and withal differ eſſentially, according to his own ſyſtem, in the number of ſtamina, which removes them to different claſſes.

The firſt ſort has been pretty common in the nurſeries near London ſome years, where it is propagated by laying down the branches, which afford ſhoots in plenty for that purpoſe from the root, and lower part of the ſtem, ſo as to become very buſhy and thick, if they are not cut off; there are numbers of theſe ſhrubs which produce flowers in England every year, but none of them ripen their ſeeds.

The leaves of this plant are extremely bitter, ſo that if a ſingle one is chewed, the bitterneſs cannot be gotten rid of in a long time. Theſe leaves will continue green very late in autumn, if the ſeaſon proves mild, and they come out early in the ſpring, but are frequently pinched by the froſt in March, when they appear ſo ſoon. This ſhrub flowers in July and Auguſt. It grows naturally in Virginia and Carolina.

It loves a light ſoil, not too dry, and ſhould have a warm ſituation; for, in expoſed places, the young ſhoots are frequently killed in the winter, whereby the ſhrubs are rendered unſightly; but where they are near the ſhelter of trees, or walls, they are very rarely hurt.

The ſecond ſort grows naturally in Carolina, and alſo in ſome warm parts of Virginia, but chiefly near the ſea; this, in the natural places of its growth, riſes to the height of ten or twelve feet, ſending out branches from the ground upward, which form themſelves into a ſort of pyramid, garniſhed with ſpear-ſhaped leaves, placed alternately; theſe are in texture and colour like thoſe of Alaternus, and continue green through the year. The flowers are produced in cloſe whorls round the branches, at the foot-ſtalks of the leaves; they are white, and of the ſame ſhape as the former; theſe are ſucceeded by red berries, like thoſe of the former ſort.

Dr. Linnæus has ſeparated this from the claſs in which he has placed the other, and has joined it to the Dahoon Holly, ſuppoſing them to be the ſame plant; in which he is equally miſtaken, for they not only differ in the ſhape of their leaves, but alſo in their eſſential characters; for the Dahoon Holly muſt, according to his ſyſtem, be ranged in his twenty-ſecond claſs, and the Caſſine muſt be ranged in his fifth.

This plant was many years preſerved in ſeveral curious gardens near London, till the ſevere winter in 1739, when moſt of them were deſtroyed, ſo that there was ſcarce any left; but of late years there have been many of the young plants raiſed from ſeeds, which came from Carolina, ſome of which have been growing in the full ground ſeveral years, and have reſiſted the cold of the winters, without covering; though they often ſuffer in very cold ſeaſons, where they are not very well ſheltered. If this plant can be brought to thrive well in England, and to endure the winter in the open air, it will be a fine plant, to make a variety in plantations of Evergreen-trees. The leaves of this ſort are not ſo bitter as thoſe of the firſt, eſpecially when green, therefore are preferred to them for making the Thea; but an infuſion of the leaves of the firſt, has been taken for a loſs of appetite by ſome perſons with good ſucceſs; but it muſt not be too ſtrong, leſt it ſhould prove emetic or cathartic.

The inhabitants of North Carolina and Virginia, where this ſhrub grows in plenty, give it the title of Yapon, which I ſuppoſe to be the Indian name; for, as it is a plant much eſteemed by the Indians for its medicinal virtues, they certainly have a name for it; this grows to the height of ten or twelve feet; the leaves are about the ſize and ſhape of thoſe of the ſmall leaved Alaternus, but are ſomewhat ſhorter, and a little broader at their baſe; they are a little notched about their edges, and are of a thick ſubſtance, and deep green colour; the flowers of this ſort are produced at the joints near the foot-ſtalk of the leaves, but the Caſſioberry Buſh produces its flowers in umbels at the extremity of the ſhoots; the berries of this Yapon continue upon the plants moſt part of the winter, and, being of a bright red colour, intermixed with the green leaves, make a fine appearance at that ſeaſon. From theſe berries continuing ſo long untouched by the birds, we may reaſonably conclude, they have ſome venomous quality, becauſe few of the fruits, or berries, which are wholeſome, eſcape the birds, in a country where there are ſuch flocks of many kinds of them.

Theſe ſhrubs are propagated by ſowing their ſeeds (which are obtained from Carolina, where they grow in great plenty near the ſea-coaſts;) they ſhould be ſown in pots filled with light ſandy earth, and plunged into a gentle hot-bed, obſerving to water them frequently, until you ſee the plants appear, which is ſometimes in five or ſix weeks time, and at other times they will remain in the ground until the ſecond year; therefore, if the plants ſhould not come up in two months time, you ſhould remove the pots into a ſhady ſituation, where they may remain till October, being careful to keep them clean from weeds, and now and then in dry weather giving them a little water;

water; then remove theſe pots into ſhelter during the winter ſeaſon, and in the March following put them upon a freſh hot-bed, which will forward the ſeeds in their vegetation.

When the plants are come up, they ſhould, by degrees, be expoſed to the open air, in order to inure them to our climate; yet they ſhould not be expoſed to the open ſun at firſt, but rather let them have the morning ſun only, placing them for ſome time where they may be ſheltered from cold winds; they ſhould enjoy a ſhelter during the two or three firſt winters, after which the Caſſioberry Buſh may be planted abroad; but the South-Sea Thea ſhould be kept in pots a year or two longer, being ſlower of growth, and will therefore not have ſtrength enough to reſiſt the cold when young.

The third ſort has been but few years introduced to the Engliſh gardens; this riſes eight or ten feet high, ſending out branches from the root to the top, garniſhed with oval, ſmooth, entire leaves placed oppoſite, whoſe foot-ſtalks are drawn toward each other, whereby the leaves turn upward; the flowers come out from the wings of the leaves thinly, they are white, and of the ſame ſhape with thoſe of the other ſorts, but are not ſucceeded by berries in England.

This is propagated by ſeeds as the other ſorts, or by laying down the branches in the ſpring, which if carefully performed will take root in one year; when they may be cut from the old plant, and put into ſmall pots, and placed in the ſhade till they have taken new root; afterward they may be expoſed in ſummer, but in autumn they muſt be removed into ſhelter.

The Paraguay, or South-Sea Thea, is accounted by the Indians very wholeſome, and (as I have been informed by ſeveral worthy perſons, who reſided for ſeveral years in Carolina) is the only phyſic the Indians uſe; and for which, at certain times of the year, they come in droves, ſome hundred miles diſtant, for the leaves of this tree (it not being known to grow at any conſiderable diſtance from the ſea;) where their uſual cuſtom is, to make a fire upon the ground, and, putting a great kettle of water thereon, they throw into it a large quantity of theſe leaves, and immediately ſet themſelves round the fire, and, with a bowl that holds about a pint, they begin drinking large draughts, which in a very ſhort time vomits them ſeverely; thus they continue drinking and vomiting, for the ſpace of two or three days, until they have ſufficiently cleanſed themſelves; then they gather every one a bundle of the ſhrub to carry away with them, and retire to their habitations. But theſe gentlemen obſerved ſomething very extraordinary in the operation of this plant, which was, that in vomiting it gave them no uneaſineſs, or pain, but came away in a full ſtream from their mouths, without ſo much as declining their heads, or the leaſt reaching.

This plant is generally ſuppoſed to be the ſame as that which grows in Paraguay, where the jeſuits of that country make a great revenue of the leaves, which they export to ſeveral other countries, where it is infuſed and drank like tea; indeed, there are ſome perſons who doubt its being the ſame; which will be pretty difficult to determine, ſince there is ſo little converſe between the inhabitants of Paraguay and thoſe in Europe; and all the leaves of that tea, which have been brought to Europe, have been generally ſo broken and defaced, as to render it almoſt impoſſible to know their true figure; however, from ſome of the faireſt leaves, which were picked out of the Paraguay Tea by a perſon of ſkill, who compared them with thoſe of the Yapon, he had great reaſon to believe they were the ſame; and as the virtues attributed to the Yapon are nearly, if not abſolutely, the ſame with thoſe of the Paraguay, the Indians of theſe northern parts of America making the ſame uſe of it as the inhabitants of the ſouth parts of America do, viz. to reſtore loſt appetites, and they ſay it gives them courage and agility, for which purpoſes it has been in uſe time out of mind: we may alſo obſerve, that the place of its growth in the north, is the ſame latitude as Paraguay is ſouth; ſo I ſhall beg leave to inſert the account given of the Paraguay Tea by Monſ. Frezier, who travelled through great part of New Spain, by expreſs order of the king of France.

In South Carolina the plant is called Caſſena, or South-Sea Tea: the inhabitants of that country do not make ſo great uſe of this Tea, as thoſe of Virginia and North Carolina; in the laſt of which, the white people have it in as great eſteem as the Indians, and make as conſtant uſe of it.

Monſieur Frezier alſo ſays, that the Spaniards who live near the gold mines in Peru, are obliged frequently to drink of the herb Paraguay or Mate, to moiſten their breaſts, without which, they are liable to a ſort of ſuffocation, from the ſtrong exhalations which are continually coming from the mines.

The ſame author alſo adds, that the inhabitants of Lima, during the day-time, make much uſe of the herb Paraguay, which ſome call St. Bartholomew's Herb, who, they pretend, came into thoſe provinces, where he made it wholeſome and beneficial; whereas, before it was venomous; this, he ſays, is brought to Lima dry, and almoſt in powder.

Inſtead of drinking the tincture or infuſion apart, as we drink tea, they put the herb into a cup or bowl made of a calabaſh tipped with ſilver, which they call mate; they add ſugar, and pour the hot water upon it, which they drink immediately, without giving it time to infuſe, becauſe it turns black as ink. To avoid ſwallowing the herb, which ſwims at the top, they make uſe of a ſilver pipe, at the end whereof is a bowl full of little holes; ſo that the liquor ſucked in at the other end, is clear from the herb. They drink round with the ſame pipe, pouring hot water on the ſame herb, as it is drunk off. Inſtead of a pipe, which they call bombilla, ſome part the herb with a ſilver ſeparator, called apartador, full of little holes. The reluctancy which the French have ſhewn to drink after all ſorts of people, in a country where many have the venereal diſeaſe, has occaſioned the inventing the uſe of little glaſs pipes, which they begin to uſe at Lima. This liquor, he ſays, in his opinion, is better than tea; it has a flavour of the herb, which is agreeable enough: the people of the country are ſo uſed to it, that even the pooreſt drink it once a day, when they riſe in the morning.

The trade for this herb, (he ſays,) is carried on at Santa Fé, whether it is brought up the river of Plate. There are two ſorts of it; the one called Yerba de Palos; and the other, which is finer, and of more virtue, Yerba de Camini; the laſt is brought from the lands belonging to the jeſuits. The great conſumption of it is between La Paz and Cuſco, where it is worth half as much more as the other, which is ſent from Potoſi to La Paz. There come yearly from Paraguay into Peru about fifty thouſand arrovas, twelve thouſand hundred weight of both ſorts, whereof at leaſt one third is of the Camini, without reckoning twenty-five thouſand arrovas of that of Palos for Chili. They pay for each parcel, containing ſix or ſeven arrovas, four royals for the duty called alcavala (being a rate upon all goods ſold;) which, with the charge of carriage, being above ſix hundred leagues, doubles the firſt prices, which is about two pieces of eight; ſo that at Potoſi it comes to about five pieces of eight the arrova. The carriage is commonly by carts, which carry an hundred and fifty arrovas from Santa Fé to Jujuy, the laſt town of the province of Tucuman; and from thence to Potoſi, which is an hundred leagues farther, it is carried on mules.

What this curious author has obſerved, on there being two ſorts of this herb, may very well agree with the two laſt ſorts mentioned, ſince both of them are generally ſuppoſed to agree in their qualities, though one is much preferable to the other; therefore I imagine the Yerba de Camini, is what we call Paraguay or South-Sea Thea; and Yerba de Palos to be

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our third ſort. But as our author only ſaw the dried herb, he could no more diſtinguiſh their difference, than we can the Thea brought from China; I mean, as to the particular trees which produce it.

CASSYTHA. Lin. Gen. Plant. 505.

The CHARACTERS are,

It hath a ſmall three-leaved permanent empalement; the flower hath three petals which are concave and permanent, and three oblong, coloured, nectarious glands ſurrounding the germen, with nine erect compreſſed ſtamina, and two globular glands, incloſing each a ſingle ſtamina, ſitting on one ſide the baſe; theſe have ſummits under the top of the ſtamina; it has an oval germen within the coloured empalement, ſupporting a thick ſtyle the length of the ſtamina, crowned by an obtuſe almoſt trifid ſtigma; the receptacle becomes a pulpy berry, globular but a little depreſſed, incloſed in the coloured empalement, having a perforated navel-incloſing many oval ſeeds.

This is ranged in Linnæus's firſt order of his eleventh claſs of plants, intitled Enneandria Monogynia, the flower having eleven ſtamina and one ſtyle.

We have at preſent but one SPECIES of this genus.

CASSYTHA (*Filiformis*) Oſb. It. Lin. 530. *Slender Caſſytha.* Cuſcuta baccifera Barbadenſium. Pluk. Phyt. tab. 172. f. 2.

This plant grows naturally in both Indies. I have received it from Barbadoes, Jamaica, and the Spaniſh Weſt Indies; and that it grows alſo in the Eaſt Indies, is plain from its figure in the Hortus Malabaricus. It riſes with taper ſucculent ſtalks, which divide into many ſlender ſucculent branches; theſe come out frequently by threes or fours at the ſame joint, afterward they ſend out ſide branches ſingly without order, and become very buſhy: the flowers come out on the ſide of the branches ſingly, ſitting very cloſe thereto, having no empalement; the corolla is oval, white, with a ſmall tincture of red, opening like a navel at the top, including the germen, ſtamina, ſtyle, and nectarious glands ſo cloſely, as not to be diſcovered till the corolla is cut open; after the flower is paſt, the germen becomes many oblong, oval, dark ſeeds, ſurrounded with a mucilaginous ſubſtance.

This plant is eaſily propagated by planting cuttings of it during the ſummer months, but as theſe cuttings are ſucculent, it will be proper to cut them off a week before they are planted, laying them in the ſtove, that the part cut may have time to heal over before they are planted. Theſe cuttings ſhould be planted in ſmall pots, which muſt be plunged into a moderate hot-bed, where, if they are not over watered, they will take root in ſix weeks; then they may be parted, planting each into a ſeparate ſmall pot, filled with light ſandy earth, and may be plunged again into the hot-bed to forward their taking new root; after which they ſhould be removed into a dry ſtove, where they ſhould conſtantly remain, giving but little water in winter, and in ſummer admitting a large ſhare of air in warm weather, for this plant is too tender to thrive in the open air in this climate.

CASTANEA. Tourn. Inſt. R. H. 584. tab. 352. Fagus. Lin. Gen. Plant. 951. [It takes its name from Caſtana, a city of Theſſaly, where this tree anciently grew in great plenty.] The Cheſnut-tree, in French *Chateignier*, or *Maronnier*.

The CHARACTERS are,

It hath male and female flowers on the ſame tree, ſometimes at ſeparate diſtances, and at other times near each other. The male flowers are fixed to a long ſtring, forming a ſort of katkin; theſe have each an empalement of one leaf, cut into five parts; they have no petals, but include about ten or twelve briſtly ſtamina, terminated by oblong ſummits. The female flowers have alſo an empalement of one leaf, divided into four parts, having no petals, but a germen fixed to the empalement, ſupports three ſtyles crowned by a reflexed ſtigma. The germen, which is ſituated at the baſe of the empalement, becomes a roundiſh fruit armed with ſoft ſpines, including one or more nuts.

This genus of plants is ranged in the eighth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Polyandria, the plants of this ſection have male and female flowers, and the male flowers have many ſtamina; but he has joined this genus to the Fagus, making theſe of one genus, ſo that he has entirely aboliſhed the title. However, as the male flowers of the Cheſnut are formed into long katkins, and thoſe of the Beech are globular, they may with propriety be kept ſeparate; and this I chooſe to do, that it may be more intelligible to common readers.

The SPECIES are,

1. CASTANEA (*Sativa*) foliis lanceolatis acuminato-ſerratis, ſubtus nudis. *Cheſnut with ſpear-ſhaped leaves, which are ſharply ſawed, and naked on their under ſide.* Caſtanea ſativa. C. B. P. 418. *The manured Cheſnut.*
2. CASTANEA (*Pumila*) foliis lanceolato-ovatis acutè ſerratis, ſubtus tomentoſis, amentis filiformibus nodoſis. *Cheſnut with oval ſpear-ſhaped leaves ſharply ſawed, which are woolly on their under ſide, and a ſlender knotted katkin.* Caſtanea pumila Virginiana, racemoſa fructu parvo in ſingulis capſulis echinato unico. Pluk. Alm. 90. *The Chinquapin.*
3. CASTANEA (*Sloanea*) foliis oblongo-ovatis, ſerratis, fructu rotundo maximo echinato. *Cheſnut with oblong, oval, ſawed leaves, and a very large, round, prickly fruit.* Sloanea amplis Caſtanæ foliis. fructu echinato. Plum. Nov. Gen. 49.

The Cheſnut is a tree which deſerves our care, as much as any of the trees which are propagated in this country, either for uſe or beauty, being one of the beſt ſort of timber, and affording a goodly ſhade. It will grow to a very great ſize, and ſpread its branches finely on every ſide where it has room. The leaves are large, of a lucid green, and continue late in the autumn; nor are they ſo liable to be eaten by inſects, as are thoſe of the Oak, which of late years have frequently happened to the latter, and has rendered them very unſightly great part of ſummer, which I have never obſerved to be the caſe with the Cheſnut, which renders them more valuable for parks and plantations for ornament; and there is no better food for deer, and many other animals, than their nuts, which moſt of them prefer to acorns; but yet, there ſhould not be many of theſe trees planted too near the habitation; becauſe, when they are in flower, they emit a very diſagreeable odour, which is very offenſive to moſt people.

There are ſeveral varieties of this tree, which have accidentally ariſen from ſeeds; ſome have been ſuppoſed diſtinct ſpecies, but the differences are only in the ſize of their fruit and leaves, which have been altered, and improved by culture; ſo that the wild and manured Cheſnut, are undoubtedly the ſame; for I have frequently found, that the nuts taken from the ſame tree, and cultivated in the ſame ſoil, with equal care, have produced trees with very ſmall fruit; and among them have been others, whoſe fruit have been as large as thoſe of the parent tree; therefore they can be only eſteemed as varieties. But in many countries, where the trees are cultivated for their fruit, the people graft the largeſt and faireſt fruit, upon ſtocks of Cheſnut raiſed from the nut; and theſe grafted trees are by the French called Maronnier, but they are unfit for timber.

There is alſo a Cheſnut with variegated leaves, which is propagated in the nurſeries by way of curioſity: this is maintained by budding, and inarching it upon common Cheſnut ſtocks, in the ſame manner as other fruit-trees; but theſe variegated trees and plants are not ſo much regarded at preſent, as they were ſome years paſt.

The Dwarf branching Cheſnut which is mentioned in moſt of the books, I take to be only a variety of the common; for Dr. Boerhaave ſhewed me ſome young trees in his garden near Leyden, which he had raiſed from nuts, which were ſent him by Micheli from Florence, as the true fruit of the Dwarf Cheſnut; but there appeared to be no difference between thoſe, and ſome other which came from nuts of the large ſort.

The third ſort grows in South Carolina, from whence ſome of the fruit with their outer covers, were ſent to his grace the Duke of Bedford, a few years paſt: theſe were as large and round as a tennis-ball, and armed all over with ſtrong ſpines like a hedge-hog: theſe capſulæ were divided regularly in four cells, each containing one ſmall Cheſnut. At that time I compared theſe with father Plumier's deſcription and figure, which he exhibited under the title of Sloanea, and found them to agree exactly; and upon looking through the box in which theſe were ſent, I found ſome of the leaves of the tree, which alſo tallied with his deſcription, which confirmed my former opinion; therefore, as I could ſee no other difference between the fruit of this and the common Cheſnut, but its having four regular cells, divided by partitions, whereas thoſe of the Cheſnut have generally but three; therefore I have joined them together, being perſuaded, that farther obſervations will juſtify my ſo doing.

It does not appear where Plumier found this tree growing naturally, though it is probable, it might be in Louiſiana; for I think it could not be in either of the Weſt India iſlands, where the heat is too great for this tree to thrive; though this is tender while young, for two or three young plants which were raiſed in England, did not ſurvive the third winter.

The firſt of theſe trees was formerly in greater plenty amongſt us than at preſent, as may be proved by the old buildings in London, which were for the moſt part of this timber; and in a deſcription of London, written by Fitz-Stephens, in Henry the Second's time, he ſpeaks of a very noble foreſt, which grew on the north part of it: proxime (ſays he) patet foreſta ingens, ſaltus numeroſi ferarum, latebræ cervorum, damarum, aprorum, & taurorum ſylveſtrium, &c. And there are now ſome remains of old decayed Cheſnuts, in the woods and chaces not far diſtant from London, but particularly on Enfield Chace; which plainly proves, that this tree is not ſo great a ſtranger to our climate, as many people believe; and may be cultivated in England, to afford an equal profit with any of the other ſorts of larger timber-trees, ſince the wood of this tree is equal in value to the beſt Oak, and, for many purpoſes, far exceeding it; as particularly for making veſſels for all kinds of liquor, it having a property (when once thoroughly ſeaſoned) of maintaining its bulk conſtantly, and is not ſubject to ſhrink or ſwell, as other timber is too apt to do: and I am certainly informed, that all the large caſks, tuns, &c. for their wines in Italy, are made of this timber; and it is for that, and many more purpoſes, in greater eſteem among the Italians, than any other timber whatever. It is alſo very valuable for pipes to convey water under ground, as enduring longer than the Elm, or any other wood. In Italy it is planted for coppice-wood, and is very much cultivated in ſtools, to make ſtakes for their Vines; which, being ſtuck into the ground, will endure ſeven years, which is longer than any other ſtakes will do, by near half the time. The uſefulneſs of the timber, together with the beauty of the tree, renders it as well worth propagating as any tree whatever.

Theſe trees are propagated by planting the nuts in February, in beds of freſh undunged earth. The beſt nuts for ſowing, are ſuch as are brought from Portugal and Spain, and are commonly ſold in winter for eating, provided they are not kiln-dried, which is generally the caſe of moſt of thoſe brought from abroad, which is done to prevent their ſprouting or ſhooting in their paſſage; therefore, if they cannot be procured freſh from the tree, it will be much better to uſe thoſe of the growth of England, which are full as good to ſow for timber or beauty, as any of the foreign nuts, though their fruit is much ſmaller: theſe ſhould be preſerved, until the ſeaſon for ſowing, in ſand, where mice, or other vermin cannot come to them, otherwiſe they will ſoon deſtroy them: before you ſet them, it will be proper to put them into water, to try their goodneſs, which is known by their ponderoſity; thoſe of them that ſwim upon the ſurface of the water ſhould be rejected as good for nothing; but ſuch as ſink to the bottom, you may be ſure are good.

In ſetting theſe ſeeds or nuts, the beſt way is, to make a drill with a hoe (as is commonly practiſed in ſetting Kidney Beans) about four inches deep, in which you ſhould place the nuts, at about four inches diſtance, with their eye uppermoſt; then draw the earth over them with a rake, and make a ſecond drill at about a foot diſtance from the former, proceeding as before, allowing three or four rows in a bed, with an alley between, three feet broad, for a conveniency of clearing the beds, &c. When you have finiſhed your plantation, you muſt be careful that it is not deſtroyed by mice, or other vermin; which is very often the caſe, if they are not prevented by traps, or other means.

In April theſe nuts will appear above ground; you muſt therefore obſerve to keep them clear from weeds, eſpecially while young: in theſe beds they may remain for two years, when you ſhould remove them into a nurſery, at a wider diſtance. The beſt ſeaſon for tranſplanting theſe trees, is either in October or the latter end of February; but October is the beſt ſeaſon: the diſtance theſe ſhould have in the nurſery, is three feet row from row, and one foot in the rows: you muſt be careful in tranſplanting theſe trees, to take them up without injuring their roots, nor ſhould they remain long out of the ground; but if they have a downright tap-root, it ſhould be cut off, eſpecially if they are intended to be removed again; this will occaſion their putting out lateral roots, and render them leſs ſubject to miſcarry when they are removed for good.

The time generally allowed them in this nurſery, is three or four years, according to their growth; but the younger they are tranſplanted, if deſigned for timber, the better they will ſucceed; during which time you ſhould be careful to keep them clear from weeds, obſerving alſo to prune off lateral branches, which would retard their upright growth; and where you find any that are diſpoſed to grow crooked, either by their upper bud being hurt, or from any other accident, you may the year after planting, in March, cut them down to the lowermoſt eye next the ſurface of the ground, which will cauſe them to make one ſtrong upright ſhoot, and may be afterwards trained into good ſtrait trees: but this ſhould not be practiſed, unleſs the plants have abſolutely loſt their leading ſhoot; for although the ſtems of the trees ſhould be very crooked (as is generally the caſe with them when young) yet when they are tranſplanted out, and have room to grow, as they increaſe in bulk, they will grow more upright, and their ſtems will become ſtrait, as I have frequently obſerved where there have been great plantations made of them.

But in doing of this, you muſt be careful not to diſturb or break their roots, which, perhaps might deſtroy them. Theſe trees require no other manure than their own leaves, which ſhould be ſuffered to rot upon the ground; and in the ſpring of the year, the ground ſhould have a ſlight digging, when theſe ſhould be buried between their roots, but not too cloſe to the trees, which might be injurious to their young fibres.

After having remained three or four years in the nurſery, they will be fit for tranſplanting, either in rows to grow for timber, or in quarters for wilderneſs plantations; but if you intend them for timber, it is by much the better method to ſow them in furrows (as is practiſed for Oaks, &c.) and let them remain unremoved; for theſe trees are apt to have a downright tap-root, which, being hurt by tranſplanting, is often a check to their upright growth, and cauſes them to ſhoot out into lateral branches, as is the caſe with the Oak, Walnut, &c.

Therefore, wherever any of theſe trees are planted for timber, they ſhould remain unremoved: but where the fruit of them is more ſought after, then it is certainly the better way to tranſplant them; for as

tranſplanting is a check to the luxuriant growth of trees, ſo it is a promoter of their fructification, as may be evinced by obſerving low ſhrubby Oaks, Walnuts, &c. which generally have a greater plenty of fruit, than any of the larger and more vigorous trees; and the fruit of ſuch trees is much ſuperior in taſte, though the ſeeds of vigorous trees are vaſtly preferable for plantations of timber; for it is a conſtant obſervation, that, by ſaving ſeeds from dwarf trees or plants, from time to time, they may be rendered much lower in their growth than is their natural ſize; but where the fruit is moſt deſired, then they ſhould be taken from ſuch trees as produce the largeſt and ſweeteſt nuts, which are commonly found upon ſuch trees as ſpread the moſt, and have horizontal roots; for the weaker trees being leſs capable to furniſh a ſupply of nouriſhment, and having a greater quantity of fruit upon them, to which this muſt be diſtributed, together with their roots lying near the ſurface of the ground (by which means the juices are better prepared by ſun, air, &c. before it enters their veſſels,) it is certain their juices are better digeſted, and their fruits better maturated, than thoſe can poſſibly be, which grow upon ſtrong vigorous trees, which have long tap-roots running ſeveral feet deep into the earth, and conſequently take in vaſt quantities of crude unprepared juice, which is buoyed up to the extreme parts of the tree; and theſe ſeldom having many lateral branches, to digeſt and prepare their juice, by perſpiring and throwing off the crude part before it enters the fruits.

And this, I dare ſay, univerſally holds good in all ſorts of fruit trees, and is often the occaſion of the good and bad qualities of the ſame ſorts of fruits growing on the ſame ſoil.

What has been related about grafting this tree into the Walnut, to promote their bearing, or render their fruit fairer; or inoculating Cherries into the Cheſnut, for later fruit, is very whimſical and ſilly, ſince neither the Cheſnut nor Walnut will receive its own kind any other way than by inoculating or inarching; and it is the latter only, by which the Walnut can be propagated; nor was it ever known, that any two trees of a different genus would take upon each other, ſo as to produce either a good tree or fruit; therefore we may juſtly explode all thoſe different graftings of various trees upon each other, ſo much talked of by the ancients; at leaſt we may ſuppoſe thoſe trees are not known by the ſame names now, that they are mentioned by in their writings; for I have made many trials upon them, which, although performed with great care, and in different ſeaſons, yet ſcarcely one of them ſucceeded. But to return:

If you deſign a large plantation of theſe trees for timber, after having two or three times ploughed the ground, the better to deſtroy the roots of weeds, you ſhould make your furrows about ſix feet diſtance from each other, in which you ſhould lay the nuts about ten inches apart, covering them with earth about three inches deep; and, when they come up, you muſt carefully clear them from weeds: the diſtance allowed between each row, is for the uſe of the horſe hoeing plough, which will diſpatch a great deal of this work in a ſhort time; but it ſhould be performed with great care, ſo as not to injure the young plants; therefore the middle of the ſpaces only ſhould be cleaned with this inſtrument, and a hand hoe muſt be uſed to clean between the plants in the rows, and alſo on each ſide, where it will be unſafe for the plough to be drawn: and in hand hoeing, there muſt be great care taken, not to cut the tender rind of the plants. If the following ſpring the ſpaces are carefully ſtirred with the plough, it will not only make the ground clean, but alſo looſen it, ſo as that the ſun and moiſture may more eaſily penetrate the ſame, which will greatly promote the growth of the plants; and the oftener theſe ploughings are repeated, the cleaner will be the ground, and the greater will be the progreſs of the plants, which cannot be kept too clean while they are young. When theſe have remained three or four years (if the nuts ſucceeded well,) you will have many of theſe trees to remove, which ſhould be done at the ſeaſons before directed, leaving the trees about three feet diſtance in the rows; at which diſtance they may remain for three or four years more, when you ſhould remove every other tree to make room for the remaining, which will reduce the whole plantation to ſix feet ſquare, which will be diſtance enough for them to remain in, until they are large enough for poles, when you may cut down every other of theſe trees (making choice of the leaſt promiſing,) within a foot of the ground, in order to make ſtools for poles, which, in eight or ten years time, will be ſtrong enough to lop for hoops, hop poles, &c. for which purpoſes they are preferable to moſt other trees; ſo that every tenth year, here will be a freſh crop, which will pay the rent of the ground, and all other incumbent charges, and, at the ſame time, a full crop of growing timber left upon the ground: but as the large trees increaſe in bulk, their diſtance of twelve feet ſquare will be too ſmall; therefore when they have grown to a ſize for ſmall boards, you ſhould fell every other tree, which will reduce them to twenty-four feet ſquare, which is a proper diſtance for them to remain for good; this will give air to the under wood (which, by this time, would be too much overhung by the cloſeneſs of the large trees;) by which means that will be greatly encouraged, and the ſmall timber felled, will pay ſufficient intereſt for the money at firſt laid out in planting, &c. with the principal alſo: ſo that all the remaining trees are clear profit, for the under wood ſtill continuing, will pay the rent of the ground, and all other expences; and what a fine eſtate here will be for a ſucceeding generation, in about fourſcore years, I leave every one to judge.

The Chinquapin, or Dwarf Virginian Cheſnut, is at preſent very rare in England: it is very common in the woods of America, where it ſeldom grows above twelve or fourteen feet high, and produces great plenty of nuts, which are, for the moſt part, ſingle in each outer coat or capſule. This tree is very hardy, and will reſiſt the ſevereſt of our winters in the open ground, but is very apt to decay in ſummer, eſpecially if it is planted in very dry ground. The nuts of theſe trees, if brought from America, ſhould be put up in ſand as ſoon as they are ripe, and ſent to England immediately, otherwiſe they loſe their growing quality, which is the reaſon this tree is at preſent ſo ſcarce with us; for not one ſeed in five hundred ſent over ever grew, which was owing to the neglect of putting them up in this manner: indeed, moſt of the nuts which have been brought over, have been kiln-dried, to preſerve them from ſprouting, which infallibly deſtroys the germen. When the nuts arrive, they ſhould be put into the ground as ſoon as poſſible; and if the winter ſhould prove ſevere, it will be proper to cover the ground with leaves, tan, or Peaſe-haulm, to prevent the froſt from penetrating the ground, ſo as to deſtroy the nuts. This ſort of Cheſnut delights in a moiſt ſoil; but if the wet continues long upon the ground in winter, it is apt to kill the trees. This will take by inarching it upon the common ſort, but the trees ſo propagated ſeldom ſucceed well.

I have ſeen a ſpecimen, and ſome nuts of a Dwarf Cheſnut, which were brought from North America, which differed from all the other ſorts; and I have been informed, that the French have raiſed plants of this kind, from the nuts which were brought from Canada; but as I have not ſeen any of the plants raiſed in England, I can give no farther account of it, than that ſome of the late writers have ſuppoſed it might be the dwarf branching kind before-mentioned.

CASTANEA EQUINA. See ÆSCULUS.

CASTOREA. See DURANTIA.

CATANANCHE. Lin. Gen. Plant. 824. [Καταναγκω, a violent allurement to love, of κατὰ and ἀνάγκη, neceſſity, or of καταναγκάζω, to compel; ſo called, becauſe

becauſe the opinion the ancients had of it, that it was a ſtrong, and almoſt invincible inducement to love.] Candia Lions Foot.

The CHARACTERS are,

The flower is compoſed of many hermaphrodite florets, thoſe on the border being longer than thoſe which are in the center; theſe are included in one common ſcaly empalement, which is permanent and elegant. The florets are of one leaf, tongue-ſhaped, indented in five parts, and are longer than the empalement; theſe have each five ſhort hairy ſtamina, terminated by cylindrical ſummits. The germen is ſituated below the flower, ſupporting a ſlender ſtyle the length of the ſtamina, crowned with a bifid ſtigma which is reflexed. The germen afterward becomes a ſingle oval ſeed, which is compreſſed and crowned with briſtles, incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis; the flowers of this claſs have their ſtamina ſeparate, and their ſummits connected together in a cylinder, and thoſe of this ſection have only hermaphrodite flowers.

The SPECIES are,

1. CATANANCHE (*Cærulea*) ſquamis calycinis inferioribus ovatis. Hort. Cliff. 390. *Catananche whoſe under ſcales of the empalement are oval.* Catanance quorundam. Lugd. Hiſt. 1190.
2. CATANANCHE (*Lutea*) ſquamis calycinis inferioribus lanceolatis. Hort. Cliff. 390. *Catananche whoſe under ſcales of the empalement are ſpear-ſhaped.* Catanance flore luteo, latiore folio. Tourn. Inſt. R. H. 478.

Tournefort mentions a third ſort with a narrow leaf, in which it differs from the ſecond; but if there is ſuch a diſtinct ſpecies, I have not happened to meet with it; for although I have frequently received the ſeeds from ſeveral parts of Europe by this title, yet I could not find any difference between the plants, and thoſe of the ſecond ſort; therefore I ſuppoſe Tournefort may have found the plants growing on a ſterile ſoil, where the leaves were much narrower than thoſe growing in a garden, or in better ground, which may have induced him to ſuppoſe they were diſtinct ſpecies. Both theſe plants grow naturally in the ſouth of France, in Spain, Italy, and Candia, from whence it had the title of Candia Lions Foot.

The firſt ſort ſends out many long, narrow, hairy leaves, which are jagged on their edges like thoſe of Buckſhorn Plantain, but the leaves are broader, the jags deeper, and at greater diſtances; theſe lie flat on the ground, turning their points upwards, which are very narrow. Between the leaves come out the flower-ſtalks, which are in number proportionable to the ſize of the plant; for from an old thriving root, there is frequently eight or ten, and young plants do not ſend out more than two or three. Theſe ſtalks riſe near two feet high, dividing into many ſmall branches upward, garniſhed with leaves like thoſe below, but are ſmaller, and have few or no jags on their edges: each of the foot-ſtalks are terminated with ſingle heads of flowers, having a dry, ſilvery, ſcaly empalement, in which are included three or four florets, whoſe petals are broad, flat, and indented at their ends; theſe are of a fine blue colour, having a dark ſpot at bottom, and in each the five ſtamina, with their yellow ſummits, ſtanding a little above the petal, make a pretty appearance.

It has been by ſome authors titled Chondrilla cærulea, i. e. *Blue Gum Cicory*; and by others Seſamoides, or Catanances Seſamoides. Caſpar Bauhin calls it Chondrilla cærulea cyani capitulo. Pin. 130. *Blue Gum Cicory with a Blue Bottle head.* There is a variety of this with double flowers, which is not very common in the Engliſh gardens.

The ſecond ſort hath broader leaves than the firſt, which are ſmoother, and leſs jagged on their edges: from each root ariſe two or three ſtalks, which grow a foot and a half high, ſending out two or three ſlender foot-ſtalks, each ſuſtaining a ſingle head of yellow flowers, incloſed in a dry ſcaly empalement, of a darker colour than thoſe of the firſt: as theſe flowers are ſmall, they make but little appearance, therefore the plant is only kept for the ſake of variety.

The firſt of theſe plants is a perennial, and may be propagated by heads taken off the mother plant, either in ſpring or autumn; but thoſe plants which are raiſed from ſeeds, are much ſtronger than thoſe from ſlips. Theſe plants are commonly planted in pots filled with light ſandy ſoil, in order to ſhelter them in the winter from ſevere froſts; but if they are planted in warm borders, either near walls, pales, or hedges, in a moderately dry ſoil, they will endure abroad very well. It begins flowering in May, and continues till Auguſt or September (eſpecially if the ſummer is not too dry,) is a pretty ornament to a garden, and is eaſily kept within bounds. This may alſo be propagated by ſeeds, which ſhould be ſown in a border of good light earth in March; and in May, when the plants are come up, they may be either tranſplanted into pots or borders, where they are to remain for flowering. Theſe plants ſhould remain unremoved when they are planted in the full ground, which will cauſe them to flower better, and they will produce more ſeeds. The ſeeds ripen in Auguſt.

The other ſort is an annual plant, and therefore only propagated by ſeeds, which ripen very well in this country. The time for ſowing them is early in March, in beds or borders of light earth where they are to remain, which will come up in a month or five weeks time, and require no other care but to keep them clean from weeds, and thin the plants where they are too cloſe. Theſe flower in June, and perfect their ſeeds in Auguſt or September; but as they have little beauty, they are not often kept in gardens.

CATAPUTIA MAJOR. See RICINUS.

CATAPUTIA MINOR. See EUPHORBIA.

CATARIA. See NEPETA.

CATCH-FLY. See LYCHNIS.

CATERPILLARS.

There are ſeveral kinds of this inſect, which are very pernicious to a garden; but there are two ſorts which are the moſt common, and deſtructive to the young plants: one of them is that which the white butterfly breeds. It is of a yellowiſh colour, ſpotted and ſtriped with black; this commonly infeſts the tender leaves of Cabbages, Cauliflowers, and the Indian Creſs: they eat off all the tender parts of the leaves, leaving only the fibres entire; ſo that very often we ſee, in the autumn ſeaſon, whole gardens of winter Cabbages and Savoys almoſt deſtroyed by them, eſpecially in thoſe which are crouded with trees, or are near buildings. They always increaſe moſt in very dry ſeaſons; and when the plants have been ſtinted by the drought, they are conſtantly attacked; whereas, thoſe which are in vigour, ſeldom ſuffer much by thoſe inſects. Nor is there any other method found out to deſtroy them that I know of, but to pick them off the plants before they are ſpread from the neſts; by which means, though perhaps many may be overlooked, yet their numbers will be greatly diminiſhed. But this work muſt be often repeated during the warm weather, when the butterflies are abroad, which are continually depoſiting their eggs, and in a few days time will be metamorphoſed to perfect caterpillars. But as theſe, for the moſt part, feed upon the outer leaves of plants, ſo they are more eaſily taken than the other ſort, which is much larger: the ſkin is very tough, and of a dark colour: this is called by the gardeners, a grub, and is exceeding hurtful. The eggs of this ſort of caterpillar, are, for the moſt part, depoſited in the very heart or center of the plant (eſpecially in Cabbages;) where, after it hath obtained its form, it eats its way out through all the leaves thereof; and alſo their dung, being lodged between the incloſed leaves of the Cabbages, gives them an ill ſcent.

This inſect alſo burrows juſt under the ſurface of the ground, and makes great havock on young plants, by eating them through their tender ſhanks, and drawing

ing them into their holes. The miſchief is chiefly done in the night: whenever you obſerve this, you ſhould every morning look over your plat of plants; and wherever you ſee any plants eaten off, ſtir the ground round about the place with your fingers an inch deep, and you will certainly find them out. This is the only method I know of deſtroying them.

CATKINS, or IULUS.

This is, by the botaniſts, called Flos Amentaceus: it is an aggregate of ſummits, which are joined together in form of a rope or cat's tail, and is the male flower of the trees which produce them; as the Firs, Pines, Cedars, Walnuts, Birch-trees, and Willows.

CATESBÆA. Lin. Gen. Plant. 121. Hiſt. Carolin. Vol. II. p. 100. The Lily Thorn.

The CHARACTERS are,

It hath a ſmall permanent empalement of one leaf, with five ſharp indentures; the flower is of one leaf, funnel-ſhaped, having a very long tube, which gradually widens to the top, where it is four-cornerned and ſpread open; it hath four ſtamina riſing in the neck of the tube, terminated by oblong creſt ſummits; the roundiſh germen is ſituated under the flower, ſupporting a ſlender ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes an oval berry with one cell, filled with angular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

We have but one SPECIES of this plant, viz.

CATESBÆA. Lin. Sp. Plant. 109. The Lily Thorn. Frutex ſpinoſus Buxi foliis, plurimis ſimul naſcentibus, flore tetrapetaloide, pendulo, ſordidè flavo, tubo longiſſimo, fructu ovali croceo, ſemina parva continente. Cateſb. Hiſt. Carol. Vol. II. p. 100.

This ſhrub was diſcovered by Mr. Cateſby, near Naſſau town, in the iſland of Providence, where he ſaw two of them growing, which were all he ever ſaw; from theſe he gathered the ſeeds, and brought them to England in 1726, from which many plants were raiſed in the Engliſh gardens, ſome of which have ſince flowered here.

It riſes with a branching ſtem to the height of ten or twelve feet, which is covered with a pale ruſſet bark; the branches come out alternately from the bottom to the top, which are garniſhed with ſmall leaves, reſembling thoſe of the Box-tree, coming out in cluſters all round the branches, at certain diſtances; the flowers come out ſingle from the ſide of the branches, hanging downward; they are tubulous, and near ſix inches long, very narrow at their baſe, but widening upward toward the top, where it is divided into four parts which ſpread open, and are reflexed backward; theſe are of a dull yellow colour. After the flower decays, the germen ſwells to an oval fleſhy berry the ſize of a middling Plumb, hollow within, and filled with ſmall angular ſeeds.

This ſhrub is propagated by ſeeds, which muſt be procured from the country where it naturally grows. If the entire ſtuit are brought over in ſand, the ſeeds will be better preſerved: when they arrive in England, the ſeeds muſt be ſown in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark, and now and then moderately watered. If the ſeeds are good, the plants will appear in about ſix weeks after ſowing; when, if the heat of the bed declines, the tan ſhould be turned over to the bottom, and, if neceſſary, ſome freſh added to renew the heat, for theſe plants make but little progreſs the firſt year. When the pots are again plunged into the tan-bed, they muſt have freſh air admitted to them every day in proportion to the warmth of the ſeaſon, and frequently refreſhed with water, in ſmall quantities, for much wet will certainly kill them; if the nights ſhould prove cold, the glaſſes ſhould be covered with mats every evening. As theſe plants grow ſlowly, they will not require to be removed out of the ſeed-pots the firſt year. In the autumn the pots ſhould be removed into the ſtove, and plunged into the tan-bed. During the winter, the plants ſhould be watered with great caution, and in ſpring they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with light ſandy earth, and plunged into a freſh hot-bed of tanners bark, being careful to ſhade them until they have taken freſh root, as alſo to refreſh them with water gently, as they may require it; and in ſummer, when the weather is warm, they ſhould have a good ſhare of air admitted to them; but in autumn muſt be removed into the ſtove, where they ſhould conſtantly remain, and muſt be treated afterward in the ſame manner as other tender exotic plants.

This plant may be propagated by planting cuttings in ſmall pots filled with light earth, during the months of June and July. The pots ſhould be plunged into a moderate hot-bed of tanners bark, and the cuttings cloſely covered with ſmall bell-glaſſes to exclude the external air. If this is properly performed, the cuttings will put out roots in about two or three months, when they may be carefully ſeparated, planting each into a ſmall pot filled with light earth, and plunged into the hot-bed again, and afterward muſt be treated as the ſeedling plants.

Moſt of thoſe plants which were raiſed from Mr. Cateſby's ſeeds, were killed by the ſevere winter in 1739; but ſeven years ago I received ſome freſh ſeeds, which ſucceeded ſo well, as to enable me to communicate plants to ſeveral curious perſons in England and Holland.

CACAULIS, Baſtard Parſley.

This is one of the umbelliferous plants with oblong ſeeds, which are a little furrowed and prickly: the petals of the flower are unequal and heart-ſhaped.

There are ſeveral ſpecies of this plant preſerved in the botanic gardens; but as there is no great beauty or uſe in any of them, I ſhall paſs them over with only obſerving, that if any perſon hath a mind to cultivate them, the beſt ſeaſon to ſow their ſeeds is in autumn, ſoon after they are ripe; for if the ſeeds are kept till ſpring, the plants ſeldom produce ripe ſeeds again. They are moſt of them biennial, and require to be ſown every year. We have four or five ſpecies of them, which grow wild in England.

CAULIFEROUS plants [of Caulis, *Lat.* a ſtalk, and *fero*, to bear;] ſuch plants as have a true ſtalk.

CAULIS, is that part of a plant which riſes ſingle above the earth, from whence the leaves or little branches put forth, as Jungius defines it; or it is the upper part of a plant ſtretched forth to an height, ſo that the fore parts differ not from the hind, nor the right from the left. In trees and ſhrubs it is called Caudix; in corn Culmus; the ſtalk of any herb; the ſtem, trunk, or body of a tree. *Lat.*

CEANOTHUS. Lin. Gen. Plant. 237. Euonymus. Com. Hort. New Jerſey Thea.

The CHARACTERS are,

It hath a turbinated empalement of one leaf, which is permanent, cut into five acute ſegments which cloſe together; the flower hath five roundiſh equal petals which ſpread open, and are leſs than the empalement; it hath five erect ſtamina, placed oppoſite to the petals, and are of equal length, terminated by roundiſh ſummits, and a three-cornered germen, ſupporting a cylindrical ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a dry capſule with three cells, in which are lodged three oval ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CEANOTHUS (*Americanus*) foliis trinerviis. Lin. Sp. Plant. 195. *Ceanothus with leaves having three nerves.* Euonymus Nervi Belgii corni fœminæ foliis. Hort. Amſt. 1. 167. *New England Dogwood with female Cornel leaves, commonly called New Jerſey Thea.*
2. CEANOTHUS (*Africanus*) foliis lanceolatis enerviis, ſtipulis ſubrotundis. Lin. Sp. Plant. 196. *Ceanothus with ſpear-ſhaped leaves without nerves, and roundiſh ſtipulæ.* Alaternoides Africana lauri ſerratæ folio. Com. Præl. 61. tab. 11.

3. CEANOTHUS (*Arboreſcens*) foliis ovatis ſeſſilibus nervoſus floribus alaribus. *Ceanothus with oval nervous leaves ſet cloſe to the branches, flowers proceeding from the wings of the leaves, commonly called Red-wood.*

The firſt ſort grows naturally in moſt parts of North America, from whence great plenty of the ſeeds have been of late years brought to Europe, by the title of New Jerſey Thea, where I have been informed the inhabitants dry the leaves of this ſhrub to uſe as Thea. The people of Canada uſe the root in venereal caſes. I have received the ſeeds of this ſort from New England, Penſylvania, Virginia, and Carolina; and the French mention it as a common ſhrub in Canada, where they ſay the cattle browze upon it, and keep it very low.

In England this ſhrub ſeldom riſes more than three or four feet high, ſending out branches on every ſide from the ground upward. The branches are very ſlender, and as it is pretty late in the ſpring before they begin to ſhoot, they keep growing very late; therefore, unleſs the autumn proves dry and mild, the tender ſhoots are often killed down very low by the early froſts; but, in favourable ſeaſons, the extreme parts of the ſhoots only are injured by the cold. Theſe branches are garniſhed with oval pointed leaves, having three longitudinal veins running from the foot-ſtalk to the point, which diverge in the broad part of the leaves from each other: the leaves are placed oppoſite, and are of a light green colour. At the extremity of each ſhoot the flowers are produced in cloſe thick ſpikes, which are compoſed of five ſmall leaves, of a clear white. Theſe appear in July, and make a pretty appearance during their continuance; for, as every ſhoot is terminated by one of theſe ſpikes, the whole ſhrub is covered over with flowers, the branches commonly growing very cloſe to each other; and when the autumn proves mild, theſe ſhrubs often flower again in October. After the flowers are paſt, there ſucceeds to each flower a tricapſular ſeed-veſſel, flatted at the top, opening into three cells, each having a ſingle ſeed. In warm ſeaſons the ſeeds ripen in England. This ſhrub is beſt propagated by ſeeds, which ſhould be ſown in the autumn in ſmall pots, and plunged into an old hot-bed, where they may remain during the winter, expoſing them in mild weather to the open air, but in froſt they muſt be protected from cold. In March the pots ſhould be plunged into a moderate hot-bed to bring up the plants, which ſhould be inured to bear the open air by degrees; and as ſoon as they have obtained a little ſtrength, they ſhould be expoſed in a ſheltered ſituation till autumn, when they muſt be placed under a hot-bed frame, to ſcreen them from ſevere froſt in winter; but in mild weather they ſhould be fully expoſed to the open air, for while the plants are young, they will not endure the cold of the winter. In the following ſpring, before the plants begin to ſhoot, they ſhould be tranſplanted; ſome of them may be put into ſeparate pots, and the others into a nurſery-bed, in a warm ſituation, where they may remain a year or two to get ſtrength, after which time they may be removed to the places where they are deſigned to remain. They ſhould have a moderately dry ſoil and a ſheltered ſituation, where they will thrive and flower extremely well; but in ſtiff cold land, they are always very late in the ſpring before they come out, ſo that their young ſhoots are full of ſap in the autumn, and the firſt froſt commonly kills their tops, which frequently cauſes them to die great part of their length.

It may alſo be propagated by laying down the young branches, which, in a light ſoil, will put out roots in a year's time, but theſe layers ſhould not be much watered; for as the ſhoots are tender, moiſture will often occaſion their rotting, when it is given in quantities, or too often repeated; therefore the beſt method is to cover the ſurface of the ground in dry weather, all round the layers, either with mulch or rotten tan, which will preſerve a ſufficient moiſture in the ground, provided the ſeaſon is not extremely dry; in which caſe they ſhould have a little water once in eight or ten days, which will be ſufficient.

The beſt time for laying down theſe branches is in autumn; and if after this is performed, the ſurface of the ground is covered over with ſome old tan, taken from a decayed hot-bed, it will prevent the froſt from penetrating the ground, which will ſecure them from injury; and the ſame covering will prevent the winds from drying the ground in the ſpring, and thereby promote their putting out roots. Theſe layers, when rooted, may be taken up the following ſpring, and treated in the ſame manner as thoſe raiſed from ſeeds.

The ſecond ſort grows naturally at the Cape of Good Hope, from whence it was originally brought to Holland, and has been many years preſerved there; and ſince has been communicated to moſt of the curious gardens in Europe, where it has been long known by the title of Alaternoides, &c. and by ſome authors it is titled Ricinoides Africana arboreſcens, &c. but Dr. Linnæus, having examined the characters more exactly, has joined it to this genus.

This riſes to the height of ten or twelve feet, with a woody ſtem, covered with a rough dark-coloured bark, and ſends out many weak branches, which hang downward; theſe while young are green, but afterward change to a purpliſh colour. They are garniſhed with oblong pointed leaves, of a lucid green, which are ſmooth, and ſlightly ſawed on their edges. The flowers are ſmall, of an herbaceous colour, coming out from the ſide of the branches; theſe ſometimes appear in July, but are not ſucceeded by ſeeds in this country, nor do the plants often produce flowers; ſo that they are preſerved only for the beauty of their ſhining evergreen leaves, which make a variety in the green-houſe during the winter ſeaſon.

It may be propagated either by layers or cuttings; the latter being a very ſure and expeditious method, is generally preferred. The cuttings ſhould be planted in the ſpring into pots filled with good kitchen-garden earth, and plunged into a very moderate hot-bed, obſerving to ſhade them in the heat of the day, and now and then refreſh them with water. In about two months or leſs, they will have taken root, when they muſt be gradually inured to the open air, placing them in a ſheltered ſituation till they have obtained ſtrength, when they may be ſeparated, and each planted in a ſmall pot filled with light earth, placing them in the ſhade till they have taken freſh root; then they may be removed, and intermixed with other exotic plants for the ſummer ſeaſon. In autumn they muſt be houſed with Myrtles, and other more hardy exotic plants, and treated in the ſame manner.

The third ſort grows naturally in the Bahama Iſlands, from whence the late Mr. Cateſby brought the ſeeds to England. It alſo grows naturally in Barbadoes, and ſome other iſlands in the Weſt Indies, from whence I have received the ſeeds. This, in the countries of its natural growth, riſes to the height of forty or fifty feet, with large trunks, which are by the inhabitants ſawn into boards, and were at firſt eſteemed for the beauty of their colour; but being expoſed to the air, their colour vaniſhed and they became pale, ſo have not ſince been much regarded.

In Europe, where the plants have been properly treated, they have grown to the height of twenty feet; and if the ſtoves in which they were placed had been lofty enough, would have grown much higher. The ſtem is ſtrong, woody, and is covered with a light brown bark, which, when young, has ſeveral furrows; the branches come out irregularly from every ſide the ſtem, garniſhed with pretty large oval leaves, of a light green colour, having ſeveral longitudinal veins inclining to white. The flowers are ſmall, of an herbaceous white, ſo make little appearance; they come out from the wings of the leaves, and, in their native ſoil, are ſucceeded by roundiſh fruit almoſt the ſize of ſmall Peaſe, opening in three cells; in each is incloſed one ſhining black ſeed.

This is propagated by ſeeds, which ſhould be ſown in the ſpring, in ſmall pots filled with light earth, and plunged into a hot-bed; theſe ſeeds lie generally two months in the ground before the plants make their appearance, during which time the pots ſhould be duly watered, and air admitted when the weather is warm. When the plants come up and are fit to remove, they ſhould be carefully ſeparated, planting each in a ſmall pot filled with light earth, watering the earth to ſettle it about their roots; then plunge them into the tan-bed again, ſhading the plants from the ſun till they have taken new root; afterward they may be treated in the ſame manner as other tender plants from the ſame countries. When the plants have obtained ſtrength, they may be preſerved in winter in a dry ſtove, but theſe will not make ſuch progreſs as thoſe in the tan-ſtove.

CECROPIA. Yaruma Oviedi. Sloan. Hiſt. Jam. The Trumpet-tree, or Snakewood.

The CHARACTERS are,

It hath male and female flowers in different plants. The male flower hath an oval acute ſpatha, which burſts and contains a tale compoſed of many katkins, which are taper and bundled together; theſe are imbricated, and have many turbinated ſcales, which are four-cornered, obtuſe, and compreſſed. The flower hath no corolla, but a ſcaly nectarium, with two ſhort hair-like ſtamina, crowned by four-cornered oblong ſummits. The female flowers have a ſpatha, with four taper imbricated germen; they have no corolla, but the compreſſed imbricated germen ſupport one ſhort ſtyle, crowned by a headed torn ſtigma. The empalement afterward turns to a berry with one cell, containing one oblong compreſſed ſeed.

This tree is ranged in the ſecond order of Linnæus's twenty-ſecond claſs, intitled Dicœcia Diandria, the male flowers growing upon ſeparate plants from the female, and have each two ſtamina.

It grows naturally in moſt of the woody parts of the iſland of Jamaica, where it riſes to the height of thirty-five or forty feet: the trunk and branches are hollow, and ſtopped at different ſpaces by membranaceous ſeptæ, which have ſo many light annular marks in the ſurface; the leaves are large, divided into many lobes like thoſe of Papaya, but the foot-ſtalk is placed more in the center, ſo as to reſemble a target: they are downy on their under ſide. The flowers are incloſed in a conical ſpatha or ſheath, the male growing upon ſeparate plants from thoſe which have the female; they are produced upon imbricated katkins, compoſed of ſeveral turbinated ſcales, having no corolla, each having a ſcaly nectarium, with two ſhort hair-like ſtamina, crowned with four-cornered oblong ſummits. The female flowers are incloſed in a conical ſpatha or ſheath; theſe have no corolla, but have four imbricated germen, ſupporting one ſhort ſtyle, crowned by a headed torn ſtigma. The empalement afterward turns to an oblong cylindrical berry, compoſed of many ſmall acini like the Strawberry, and much reſemble it in flavour when ripe.

This tree is very rare at preſent in Europe; the fruit being ſmall are generally devoured by birds, ſo are not much obſerved by the European inhabitants, but the negroes are fond of it; they alſo make uſe of the ſmall branches of the tree to obtain fire, by rubbing them againſt each other; by this attrition they ſoon emit ſparks of fire, ſo that it is a uſeful tree in that country.

I received ſpecimens of this tree from the late Dr. Houſtoun, who found it growing naturally at La Vera Cruz, in New Spain, but without flowers; nor had the Doctor leiſure to examine the characters of it, ſo that at preſent we are not ſufficiently acquainted with them.

It may be propagated by ſeeds (when procured from the places where it naturally grows.) Theſe ſhould be brought over in ſand; for as the fruit are compoſed of ſeveral acini like thoſe of Strawberries, ſo if they are put up moiſt in papers, they will be apt to grow mouldy, and thereby ſpoil the ſeeds: but

when they are put up in light ſand, it will prevent that inconveniency. The ſeeds ſhould be ſown in ſmall pots filled with light earth, and plunged into a moderate hot-bed of tanners bark, obſerving to water the pots duly, and to admit freſh air whenever the weather is favourable. When the plants come up and are fit to tranſplant, they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with the like light earth, and plunged into the hot-bed again, being careful to water them to ſettle the earth to their roots, and alſo to ſcreen them from the ſun till they have taken new root: after which they ſhould be conſtantly kept plunged into the bark-bed in the ſtove, and treated in the ſame manner as other plants from the ſame country.

CEDRUS. The Cedar-tree of Barbadoes, and the Mahogany, &c.

The CHARACTERS are,

It hath a tubulous bell-ſhaped empalement of one leaf, indented in five parts. The flower is of one leaf, divided at the top into five parts; it hath five ſhort ſtamina, which adhere at bottom to the germen, and are terminated by roundiſh ſummits; in the center is ſituated the roundiſh germen, ſupporting a thick ſtigma; the germen afterward becomes an oval pod, having five cells, opening from the bottom upward with five valves, having a double cover; the outer being thick and woody, the inner very thin, which immediately ſurrounds the ſeeds. In the center is fixed a five-cornered column the length of the pod, whoſe angles are oppoſite to the fiſſures of the pod, to which the ſeeds adhere, placed over each other like the ſcales of fiſh; theſe are thick at their baſe, but upward are flat and thin, like the wings adhering to the ſeeds of Firs and Pines.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one germen.

As the Cedar of Libanus is by Tournefort very properly referred to the genus of Larix, and all the berry-bearing Cedars are joined to the Junipers, I have given the title of Cedrus to this genus, as they were mentioned by imperfect titles by moſt of the authors who have treated of them; and as the firſt ſort has been generally known by the appellation of Cedar in the countries where it naturally grows, the applying the ſame name to thoſe plants which agree in their eſſential characters with it, will join them properly together.

The SPECIES are,

1. CEDRUS (*Odorata*) foliis pinnatis, foliolis multijugatis obtuſis, fructu ovali glabro. *Cedar-tree with winged leaves, compoſed of many pair of ſmall leaves or lobes, which are obtuſe, and an oval ſmooth fruit.* Cedrus Barbadenſium, alatis fraxini foliis non crenatis, fructu ſingulari, quinis involucris craſſis validis cochleato cavis, totidem ſemina membranis adaucta & columnæ canaliculatæ pentagonæ prægrandi adnata, occludentibus ornato. Pluk. Phyt. tab. 157. f. 1. *The Barbadoes Cedar-tree.*
2. CEDRUS (*Mahogani*) foliis pinnatis, foliolis oppoſitis, glabris, floribus racemoſis ſparſis. *Cedar with winged leaves, whoſe lobes are ſmooth and ſtand oppoſite, and flowers growing in looſe bunches.* Arbor foliis pinnatis, nullo impari alam claudente, nervo ad latus unum excurrente fructu anguloſo magno, ſemine alato inſtar Pinûs. Cateſb. Hiſt. Carol. Vol. II. p. 181. *The Mahogany-tree.*
3. CEDRUS (*Alternifolius*) foliis alternis ſimplicibus, cordato-ovatis acutis, fructu pentagono mucronato. *Cedar with ſingle leaves placed alternately, which are oval, heart-ſhaped, and acute, having a five-cornered pointed fruit.* Arbor excelſa Coryli folio ampliore. Houſt. MSS.

The firſt ſort is commonly known under the title of Cedar in the Britiſh iſlands of America, where this tree grows naturally, and is one of the largeſt trees of that country. The trunks of theſe trees are ſo large, that the inhabitants hollow them, and form them into the ſhape of boats, and periaguas, for which purpoſe they are extremely well adapted; the

wood being ſoft, it may be cut out with great facility, and being light, it will carry a great weight on the water. There are canoes in the Weſt Indies, which have been formed out of theſe trunks, which are forty feet long and ſix broad; the wood is light, of a brown colour, and has a fragrant odour, from whence the title of Cedar has been given to it. This wood is frequently cut into ſhingles for covering of houſes, and is found very durable; but as the worms are apt to eat this wood, it is not proper for building of ſhips, though it is often uſed for that purpoſe, as alſo for ſheathing of ſhips. It is often uſed for wainſcoting of rooms, and to make cheſts, becauſe vermin do not ſo frequently breed in it, as in many other ſorts of wood, this having a very bitter taſte, which is communicated to whatever is put into the cheſts, eſpecially when the wood is freſh; for which reaſon it is never made into caſks, becauſe ſpirituous liquors will diſſolve part of the reſin, and thereby acquire a very bitter taſte.

This tree riſes with a ſtrait ſtem to the height of ſeventy or eighty feet, while young the bark is ſmooth, and of an Aſh-colour; but as they advance, the bark becomes rough and of a darker colour. Toward the top it ſhoots out many ſide branches, garniſhed with winged leaves, compoſed of ſixteen or eighteen pair of lobes (or ſmall leaves) ſo that they are ſometimes near three feet long; the lobes are broad at their baſe, and are near two inches long, blunt at their ends, and of a pale colour; theſe emit a very rank odour in the ſummer ſeaſon, ſo as to be very offenſive. As I have not ſeen any of theſe flowers upon the trees, I can give no deſcription of them. The fruit is oval, about the ſize of a partridge's egg, ſmooth, of a very dark colour, and opens in five parts, having a five-cornered column ſtanding in the middle, between the angles of which the winged ſeeds are cloſely placed, lapping over each other like the ſcales of fiſh.

There are ſome plants of this ſort in England, which are preſerved in the gardens of thoſe who are curious in collecting exotic plants; theſe have been raiſed from the ſeeds which have been brought from Barbadoes, but they are too tender to live in the open air in England; therefore theſe plants ſhould be treated in the ſame manner as the Mahogony next mentioned, but they are of much quicker growth; for in four years from the ſeed, I have had the plants upward of ten feet high.

I have received plants of this kind from Paris, by the title of Semiruba; but whether the root of this tree is what they uſe in medicine under that appellation, I cannot ſay. The ſeeds of this have alſo been ſent me from the French iſlands in America, by the title of Acajou Cedre.

It is propagated by ſeeds, which may be eaſily procured from the American iſlands, which muſt be ſown upon a hot-bed in the ſpring, and the plants treated in the ſame manner as the next.

The ſecond ſort is the Mahogony, whoſe wood is now well known in England.

This tree is a native of the warmeſt parts of America, growing plentifully in the iſlands of Cuba, Jamaica, and Hiſpaniola; there are alſo many of them on the Bahama Iſlands, but I have not heard of their being found in any of the Leeward Iſlands. In Cuba and Jamaica there are trees of a very large ſize, ſo as to cut into planks of ſix feet breadth; but thoſe on the Bahama Iſlands are not ſo large, though they are frequently four feet diameter, and riſe to a great height, notwithſtanding they are generally found growing upon the ſolid rocks, where there is ſcarce any earth for their nouriſhment. The wood which has been brought from the Bahama Iſlands has uſually paſſed under the appellation of Madeira wood, but there is no doubt of its being the ſame as the Mahogony. The Spaniards make great uſe of this wood for building of ſhips; for which purpoſe it is better adapted, than any other ſort of wood yet known, being very durable, reſiſting gun ſhots, and burying the ſhot without ſplintering; nor is the worm ſo apt to eat this wood as that of the Oak, ſo that for the Weſt Indies the ſhips built of Mahogony are preferable to any other.

The excellency of this wood for all domeſtic uſes, is now ſufficiently known in England; and it is matter of ſurpriſe, that the tree ſhould not have been taken notice of by any hiſtorian or traveller to this time; the only author who has mentioned this tree, is Mr. Cateſby, in his Natural Hiſtory of Carolina, and the Bahama Iſlands, before whom I believe neither the tree or the wood was taken notice of by any writer on natural hiſtory, although the wood has been many years brought to England in great quantities.

In the Weſt Indies theſe trees are of ſo quick growth, as to arrive to a large ſize in a few years; the manner of their propagation in the Bahama Iſlands, as it is deſcribed by Mr. Cateſby, is as follows: when the fruit is ripe, the outer hard ſhell or covering ſeparates at the bottom, next the foot-ſtalk, thereby expoſing the ſeeds, which are faſtened to a hard five-cornered column, ſtanding in the middle; theſe ſeeds being broad and light, are diſperſed on the ſurface of the ground, which is very rocky. Such of the ſeeds as happen to fall into the fiſſures of the rock, very ſoon ſend forth roots; and if theſe tender fibres meet with reſiſtance from the hardneſs of the rock, they creep out on the ſurface of it, and ſeek another fiſſure, into which they creep, and ſwell to ſuch a ſize and ſtrength, as to break the rock, and thereby make way for the root's deeper penetration; and by this nouriſhment from the rock, the trees grow to a large ſize in a few years.

The leaves of this tree are winged like thoſe of the Aſh, having commonly ſix or eight pair of pinnæ (or lobes) which are ſhorter and broader at their baſe than thoſe of the Aſh, where they adhere to the mid-rib by very ſhort foot-ſtalks; theſe lobes are very ſmooth, having but one vein running through each, which is always on one ſide, ſo as to divide them unequally. We have no perfect account of the flower of this tree; thoſe which are exhibited in Mr. Cateſby's Natural Hiſtory, were drawn from a withered imperfect fragment, which were the only remains of the flowers which could be found at the time when he was there; but the fruit he has delineated very exactly, as I have had opportunity of comparing it with ſome which have been brought to Ehgland. The entire fruit, before it opens, is of a brown colour; theſe fruit grow erect, upon foot-ſtalks, which cloſely adhere to the five-cornered column, running through the middle of the fruit, and to which the ſeeds are faſtened, lying imbricatim like ſlates on a houſe, over each other; ſo that when the fruit is ripe, the outer cover divides at the bottom into five equal parts, and when theſe fall off, and the ſeeds are diſperſed, the foot-ſtalk and the column remain ſome months after on the tree.

It is propagated by ſeeds, which may be eaſily procured from the Bahama Iſlands, from whence moſt of the good ſeeds which have come to England were brought; for moſt of theſe which have been ſent from Jamaica, although brought in their pods, have not ſucceeded; whereas, thoſe from the Bahama Iſlands, have grown as well as if they were immediately taken from the trees. The ſeeds ſhould be ſown in ſmall pots filled with light ſandy earth, and plunged into a hot-bed of tanners bark, giving them a gentle watering once a week: if the ſeeds are good, the plants will appear in five or ſix weeks; and when they are two inches high, a ſufficient number of ſmall pots ſhould be filled with light earth, and plunged into the tan-bed a day or two, that the earth may be warmed before the plants are put into the pots; then the young plants ſhould be ſhaken out of the pots, and carefully ſeparated, ſo as not to tear their roots, and each planted in a ſingle pot, being careful to ſhade them till they have taken freſh root; after which they muſt be treated in the ſame manner as other tender plants from

the ſame climate, being careful not to give them much water, eſpecially in winter; as alſo when they are ſhifted, to preſerve the earth about their roots, otherwiſe they are very ſubject to periſh; for in the country where they grow naturally, they ſay it is not poſſible to remove theſe trees ſo as to live; if the plants are properly managed, they will make conſiderable progreſs. I have ſome plants now in the Chelſea garden, more than twelve feet high, which are but of eight years growth from ſeeds.

As the wood of this tree is now ſo generally uſed in England, ſo it might ſurely be worthy of the care of the planters in America, many of whom are poſſeſſed of barren rocky lands, which at preſent produce no profit; but if the ſeeds of this tree were ſown there, might turn out greatly to the advantage of their ſucceſſors, though the preſent poſſeſſors ſhould not live to enjoy the profit; but I fear there are few of the gentlemen in thoſe iſlands, who extend their thoughts ſo far, as to make proviſion for the riſing generation.

The third ſort was diſcovered by the late Dr. Houſtoun at Campeachy, from whence he ſent the ſeeds to England, which ſucceeded in ſeveral gardens; when the doctor firſt obſerved theſe trees, they were deſtitute of leaves, but were loaded with ripe fruit; and on his ſecond viſit to the place, he found the trees in full verdure, but no appearance of flowers, ſo he was at a loſs to know what genus it belonged to; but as the fruit of the trees agree exactly with thoſe of the two former ſpecies, ſo I have ventured to join it to them.

Theſe trees uſually riſe to the height of eighty feet, or upward, and divide into many large branches toward the top; garniſhed with leaves, ſomewhat reſembling thoſe of the Witch Hazel, but are broader at their baſe, and cut angular at their top; theſe are of an Aſh-colour underneath, and are ſet on the branches without any order; the fruit of this tree is much larger than that of the Barbadoes Cedar, being broad at the baſe, and diminiſhing gradually to the top, where it terminates in a point, being upwards of two inches long; this has alſo a column, or woody core, running lengthways through the fruit, to which the winged ſeeds adhere as in the two former; but as both their fruit are ſmooth on the outſide, this differs from them, in having five angles running from the baſe upward; at each angle the fruit, when ripe, ſeparates, and expoſes the winged ſeeds, which are diſperſed by the winds.

We have no account of the wood of this tree, whether it is ever uſed in buildings, or other purpoſes, as there have been few perſons of any curioſity in that country, the cutters of Logwood being the chief people who inhabit there, from whom there can be little known of the produce. The plants which have been raiſed from the ſeeds in England, have made great progreſs for the two firſt years, but afterward were but ſlow of growth; for, in ſix years more, they did not ſhoot ſo much as in the firſt year from the ſeed, when they grew more than three feet high. I made ſeveral trials to propagate the trees by cuttings and layers, but without ſucceſs; ſo that by ſeeds, ſeems to be the only method of having them; theſe may be raiſed and managed in the ſame manner as the two foregoing ſorts, and with them conſtantly kept in the bark-ſtove.

CEDAR of BERMUDAS. } See JUNIPERUS.
CEDAR of CAROLINA. }
CEDAR of JAMAICA. See THEOBROMA.
CEDAR of LIBANUS. See LARIX.
CEDAR of LYCIA. }
CEDAR of PHŒNICIA. } See JUNIPERUS.
CEDAR of VIRGINIA. }
CEIBA. See BOMBAX.

CELASTRUS. Lin. Gen. Plant. 392. Euonymoides. Iſnard. Ac. R. Sc. 1716. The Staff-tree.

The CHARACTERS are,

The flower hath a ſmall one leaved empalement, cut into five unequal blunt parts. The flower hath five oval petals, which are equal, and ſpread open. It hath five ſtamina as long as the petals, terminated by ſmall ſummits, and a ſmall germen with a large receptacle, marked with ten deep channels, ſupporting a ſhort ſtyle crowned with an obtuſe trifid ſtigma. The germen afterward becomes an oval, blunt, three-cornered capſule, opening in three cells, each containing an oval ſmooth ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, from the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CELASTRUS (*Bullatus*) inermis, foliis ovatis integerrimis. Lin. Sp. Plant. 196 *Smooth Staff-tree with oval entire leaves.* Euonymus Virginianus, rotundifolius capſulis Coccineis eleganter bullatis. Pluk. Alm. 139.
2. CELASTRUS (*Scandens*) inermis, caule volubili foliis ſerrulatis. Lin. Sp. Plant. 285. *Smooth Staff-tree with a twining ſtalk, whoſe leaves are ſlightly ſawed.* Euonymoides Canadenſis ſcandens foliis ſerratis. Iſnard. Ac. Reg. 1716.
3. CELASTRUS (*Pyracanthus*) ſpinis nudis, ramis teretibus, foliis acutis. Hort. Cliff. 72. *Staff-tree with naked ſpines, taper branches, and pointed leaves.* Lycium Æthiopicum pyracanthæ foliis. Hort. Amſt. 1. p. 163.
4. CELASTRUS (*Buxifolius*) ſpinis folioſis, ramis angulatis, foliis obtuſis. Hort. Cliff. 73. *Staff-tree with leaves on the ſpines, angular branches, and obtuſe leaves.* Lycium Portoricenſe, Buxi foliis anguſtioribus. Pluk. Alm. 234. tab. 202. f. 3.
5. CELASTRUS (*Myrtifolius*) inermis, foliis ovatis ſerrulatis, floribus racemoſis caule erecto. Hort. Cliff. 72. *Staff-tree without ſpines, oval ſawed leaves, flowers in long bunches, and an erect ſtalk.* Myrtifolia arbor, foliis latis ſubrotundis, flore albo. Sloan. Hiſt. Jam. 2. p. 79. tab. 193.

The firſt ſort grows naturally in Virginia, and many other parts of North America, where it riſes to the height of eight or ten feet; but in England there are few of them much more than half that height. It generally puts out two or three ſtems from the root, which divide upward into ſeveral branches, covered with a brown bark, garniſhed with leaves near three inches long, and two broad, which are placed alternately on the branches; the flowers come out in looſe ſpikes at the end of the branches; theſe are white, made up of five oval petals, with a germen in the center, attended by five ſtamina: when the flowers fall off, the germen ſwells to a three-cornered capſule, of a ſcarlet colour, ſet full of ſmall protuberances; this opens in three cells, each containing a hard oval ſeed, covered with a thin red pulp. This ſhrub flowers in July, but rarely produces good ſeeds in England.

It is propagated here by layers, which will take root in one year; the young branches only are proper for this purpoſe, ſo that where there is not any of theſe near the ground, the main ſtalks ſhould be drawn down, and faſtened with pegs to prevent their riſing, and the young ſhoots from them ſhould be laid. The beſt time for doing this is in autumn, when they begin to caſt their leaves, and by that time twelvemonth they will be ſufficiently rooted, when they ſhould be cut from the old plant, and planted in a nurſery for two or three years to get ſtrength; after which they muſt be removed to the places where they are to remain. This ſhrub grows naturally in moiſt places, ſo will not thrive well in a dry ſoil. It is very hardy, and bears the cold of our winters very well. It is alſo propagated by ſeeds, which are frequently brought from America; but as theſe rarely arrive here time enough to ſow before the ſpring, ſo the plants never come up the firſt year; therefore the ſeeds may be ſown either in pots, or in a bed of loamy earth, keeping them clean from weeds during the ſummer; and thoſe in the pots ſhould be placed in the ſhade till the autumn, when the pots ſhould be either plunged into the ground in a warm ſituation, or placed

placed under a common frame, to prevent the froſt from penetrating through the ſide of the pots; and if the ſurface of thoſe which are plunged in the ground, and alſo the bed where the ſeeds are ſown are lightly covered with ſome old tan from a decayed hot-bed, it will ſecure the ſeeds from being hurt by ſevere froſts. In the ſpring the plants will come up, which muſt be kept clean from weeds, and, if the ſeaſon proves dry, they ſhould have water now and then, which will greatly forward their growth. If the plants make good progreſs the firſt ſummer, they may be tranſplanted into a nurſery in autumn, otherwiſe they ſhould remain in the ſeed-bed till the ſecond year, when they may be treated in the ſame manner as the layers.

The ſecond ſort ſends out ſeveral ligneous ſtalks from the root, which are flexible, and twiſt themſelves about whatever trees and ſhrubs grow near them, or when they are at a diſtance from ſuch ſupport, they twine about each other, and riſe to the height of twelve or fourteen feet; but when they faſten themſelves about trees they will grow much taller, but wherever this happens, their branches girt the trees ſo cloſely, as in a few years will deſtroy them. Theſe are garniſhed with leaves about three inches long, and near two broad, which are ſawed on their edges, and placed alternately on the branches; they are of a lively green above, and paler on their under ſide, having ſeveral tranſverſe nerves from the middle to the ſide. The flowers are produced in ſmall bunches toward the end of the branches, which are of an herbaceous colour, compoſed of five roundiſh petals; theſe are ſucceeded by roundiſh three-cornered capſules, which are red when ripe, ſpread open in three cells, diſcloſing the ſeeds in the ſame manner as our common Spindle-tree. This flowers about the beginning of June, and the ſeeds ripen in autumn. The ſeeds of this ſort generally ripen well in England, and the plants may be propagated from the ſeeds, or by layers, in the ſame manner as the former ſort; it delights in a ſtrong loamy ſoil, rather moiſt than dry, and will grow in woods among other trees and ſhrubs, where, when the fruit is ripe, they make a pretty appearance. It grows naturally all over North America, and is extremely hardy.

The third ſort is a native of Ethiopia, from whence the ſeeds were firſt brought to the gardens in Holland, where the plants were propagated, and have been ſince communicated to moſt of the curious gardens in Europe. This riſes with an irregular ſtalk about three or four feet high, ſending out ſeveral ſide branches, covered with brown bark, garniſhed with leaves about two inches long, and more than half an inch broad, ſome of which are pointed, and others are obtuſe; they are ſtiff, of a lucid green, and come out irregular from the branches; theſe continue green through the year. The flowers are produced from the ſides of the branches in looſe tufts, many of them ariſing from one point, ſtanding upon long foot-ſtalks; they are of an herbaceous white colour, compoſed of five petals, which ſpread open, and five ſpreading ſtamina, which ſurround a ſwelling germen, ſupporting a tapering ſtyle, crowned by an obtuſe trifid ſtigma; the germen afterward becomes an oval fruit, of a fine red colour, which opens in three cells, containing one oblong hard ſeed, the other two cells being generally empty.

This plant is commonly propagated by cuttings in Europe, which is more expeditious than raiſing them from ſeeds, becauſe the ſeeds rarely come up the firſt year. The cuttings may be planted any time in ſummer; but thoſe which are planted early, will have more time to get ſtrength before winter. They ſhould be planted in ſmall pots, which will contain four cuttings in each; the earth of a kitchen garden, which is well cultivated, is as good as any for this purpoſe. The pots ſhould be then plunged into a moderate hot-bed, and ſhaded from the ſun every day, and gently refreſhed with water now and then; when they have taken root they muſt be gradually expoſed to the open air, and then placed in a ſheltered ſituation till they have obtained ſtrength, when they ſhould be ſeparated, and planted each in a ſmall pot filled with the ſame earth, then placed in the ſhade till they have taken freſh root; after which they may be placed with other exotic plants in a ſheltered ſituation till autumn, when they muſt be houſed with Myrtles, and other hardy green-houſe plants, and will require the ſame treatment.

This plant has been titled African Barberry by ſome ignorant perſons, I ſuppoſe from the reſemblance of its fruit to that of the Barberry.

The fourth ſort grows naturally at the Cape of Good Hope, from whence I received the ſeeds. This riſes with a ſlender ligneous ſtalk to the height of ten or twelve feet, covered with a light Aſh-coloured bark, and full of joints, which are armed with long ſpines, upon which grow many ſmall leaves; the branches are ſlender, and armed with the ſame ſpines at every joint, but the whole plant is ſo weak, as to require ſome ſupport, without which they would fall to the ground. The leaves come out in cluſters without any order, which are ſhaped ſomewhat like thoſe of the narrow-leaved Box-tree, but are longer, and of a looſe texture; the branches are angular, and when young their bark is whitiſh. As I have not ſeen the flowers of this ſhrub, I can give no farther deſcription of it.

This riſes very eaſily from ſeeds, and the plants make great progreſs; for I have raiſed them four feet high in two years from ſeeds, without any artificial heat; and ſome of the plants have lived thro' two winters againſt a ſouth-eaſt wall, but theſe have ſhed their leaves in winter, whereas thoſe which were removed into the green-houſe have retained their verdure through the year.

It may be propagated by cuttings, which ſhould be planted in the ſpring, and treated in the ſame manner as hath been directed for the former ſort; or if the young ſhoots are laid, they will take root in one year, and may then be tranſplanted either into pots, or againſt a good aſpected wall, where I find they will endure our ordinary winters without any protection; and if they are covered in ſevere froſts, they may be brought, when old, to live abroad without protection. Thoſe in pots will require a little ſhelter in winter, but ſhould not be tenderly treated, for that will cauſe them to have weak branches, nor will the leaves have ſo much verdure, as when they are expoſed to the open air in mild weather.

The fifth ſort grows naturally in Jamaica, and alſo in ſome of the other iſlands in the Weſt Indies, where it riſes to the height of eighteen or twenty feet, ſending out many ſide branches, garniſhed with leaves ſomewhat like thoſe of the broad-leaved Myrtle, which are ſlightly ſawed on their edges; the flowers come out from the ſide of the branches in long bunches; they are white, and compoſed of five petals, having five ſtamina placed oppoſite to them, and a germen in the center which is channelled; this afterward becomes a fruit, having five cells, each incloſing an oblong ſeed.

This plant is at preſent rare in England, for the ſeeds ſeldom grow the firſt year; therefore when the ſeeds arrive here, they ſhould be ſown in ſmall pots filled with light earth, and plunged into a tan-bed, where they ſhould remain till the following ſpring, when they ſhould be plunged into a freſh hot-bed of tanners bark; and if the pots are duly watered, the plants will appear in about a month after; when theſe are fit to remove, they ſhould be planted into ſeparate ſmall pots, and plunged again into the tan-bed, being careful to water and ſhade them till they have taken new root, after which they ſhould be treated in the ſame manner as other tender plants from the ſame countries.

CELERY or SALARY. See APIUM.

CELLS of plants [of Cellæ, *Lat.*] are thoſe partitions or hollow places in the huſks or pods of plants, in which the ſeed is contained.

C E L

CELOSIA. Lin. Gen. Plant. 255. Amaranthus. Tourn. Inſt. R. H. 234. tab. 118. Amaranth.

The CHARACTERS are,

The empalement is permanent, and compoſed of three dry coloured leaves. The flower hath five erect ſharp-pointed petals, which are permanent, ſtiff, and ſhaped like a flower-cup. It hath a ſmall nectarium joined to the border of the germen, to which adhere the five ſtamina, which are terminated by turning ſummits. The globular germen ſupports an upright ſtyle, which is as long as the ſtamina, crowned with a ſingle ſtigma. The empalement afterward becomes a globular capſule with one cell opening horizontally, containing roundiſh ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CELOSIA (*Margaritacea*) foliis ovatis ſtipulis falcatis, pedunculis angulatis, ſpicis ſcarioſis. Lin. Sp. Plant. 297. *Celoſia with oval leaves, a faulchion-ſhaped ſtipula, and a rough ſpike.* Amaranthus ſpicâ albeſcente habitiore. Martyn. Cent. 1. p. 7.
2. CELOSIA (*Criſtata*) foliis lanceolato-ovatis recurvis ſubundatis pedunculis angulatis, ſpicis oblongis criſtatis. Lin. Sp. 297. *Celoſia with oval ſpear-ſhaped leaves, angular foot-ſtalks, and oblong creſted ſpikes of flowers.* Amaranthus criſtatus. Camer. Epit. 792. *Creſted Amaranth, commonly called Cockſcomb.*
3. CELOSIA (*Paniculata*) foliis lanceolato-ovatis, paniculâ diffuſâ filiformi. Flor. Virg. 144. *Celoſia with oval ſpear-ſhaped leaves, and a ſlender diffuſed panicle.* Amaranthus paniculâ flavicante gracili holoſericeâ. Sloan. Hiſt. 1. p. 142. tab. 90.
4. CELOSIA (*Coccinea*) foliis ovatis ſtrictis inauriculatis, caule ſulcato, ſpicis multiplicibus criſtatis. Lin. Sp. 297. *Celoſia with oval leaves, a furrowed ſtalk, and many creſted ſpikes of flowers.* Amaranthus panicula ſpecioſa criſtata. C. B. P. 121.
5. CELOSIA (*Caſtrenſis*) foliis lanceolato-ovatis lineatis acuminatiſſimis, ſtipulis falcatis, ſpicis criſtatis. Lin. Sp. 297. *Celoſia with oval, linear, ſpear-ſhaped, acute-pointed leaves, and creſted ſpikes of flowers.* Amaranthus vulgaris. Rumph. Amb. 5. p. 236.
6. CELOSIA (*Lanata*) foliis lanceolatis tomentoſis obtuſis, ſpicis confertis, ſtaminibus lanatis. Flor. Zeyl. 102. *Celoſia with ſpear-ſhaped, obtuſe, woolly leaves, and many ſpikes of flowers having downy ſtamina.*

The firſt ſort here mentioned, grows naturally in America, from whence I have frequently received the ſeeds. This riſes with an upright ſtalk about two feet high, garniſhed with oval leaves ending in points, of a pale colour; thoſe on the lower part being four or five inches long, and one and a half broad in the middle, but they diminiſh gradually in their ſize upward. Toward the upper part of the ſtalk, there are a few ſide branches ſent out which ſtand erect; each of which is terminated by a ſlender ſpike of flowers, and the principal ſtalk is terminated by one which is much larger; this is two or three inches long, and about as thick as a man's middle finger, the whole ſpike being of a ſilvery colour. But there is a variety of this with ſlender pyramidal ſpikes, intermixed with red toward the top, the ſeeds of which I received from Dr. Linnæus, by the above title; but I am inclinable to think it is different from that which was figured by Dr. Martyn in his Decades of rare plants, which I have cultivated many years in the Chelſea garden, and have never found it to vary. The ſpike of this is much thicker than that of Linnæus's, and of equal ſize the whole length; whereas his diminiſhes almoſt to a point at the top, and the colours of both are very different. This ſort is annual like the other Amaranths, and requires the ſame culture.

The ſecond ſort is well known by its common appellation of Cockſcomb, which was given to it from the form of its creſted head of flowers reſembling a Cockſcomb; of this there are many varieties, which differ in their form, magnitude, and colours; but as they vary from ſeeds, they are not enumerated as diſtinct ſpecies. I have raiſed great varieties of theſe from ſeeds which came from China, and other countries, but have generally found them alter in a few years, notwithſtanding great care has been taken in the ſaving of their ſeeds: the principal colours of their heads are red, purple, yellow, and white; but I have had ſome, whoſe heads have been variegated with two or three colours. I alſo raiſed ſome from ſeeds which I received from Perſia, whoſe heads were divided like a plume of feathers, which were of a beautiful ſcarlet colour, but theſe in a few years degenerated: therefore I ſhall include all the different varieties of Cockſcomb, under this general title.

The ſeeds of the third ſort were ſent me from Jamaica by the late Dr. Houſtoun. This grows naturally in moſt of the Sugar Iſlands. It riſes with a weak ſtalk near four feet high, garniſhed with oblong pointed leaves, which ſtand oppoſite at each joint. The flowers come out in looſe panicles from the ſide of the ſtalks, and alſo at the end of the branches: theſe are divided into a great number of very ſlender ſpikes, which are of a pale yellow, ſhining with a gloſs like ſilk. The plants of this periſhed in the autumn, without perfecting their ſeeds.

The fourth ſort I received from China; this hath a furrowed ſtalk, which riſes three or four feet high, garniſhed with oval leaves which are not eared at their baſe; the ſtalk is terminated by ſeveral ſpikes of flowers which are variouſly formed, ſome being creſted, others are plumed like feathers, of a bright ſcarlet colour, ſo make a good appearance; but the ſeeds of this when carefully ſaved, are apt to degenerate.

The fifth ſort is of humbler growth, the leaves are oval, ſpear-ſhaped, ending in very acute points; the branches proceed from the wings of the leaves, almoſt the length of the ſtalk, and are terminated by ſlender ſpikes of flowers of no great beauty, therefore the plant is preſerved as a variety in the botanic gardens.

The ſixth ſort grows naturally in Ceylon; it riſes with a very white woolly ſtalk from two to three feet high, garniſhed with obtuſe, ſpear-ſhaped, woolly leaves; from the upper part of the ſtalk come out two or three ſlender ſide branches, which (as alſo the principal ſtalk) are terminated by woolly ſpikes of flowers: theſe flowers are ſo cloſely wrapped up in their woolly empalements, as to be ſcarce viſible to the naked eye, ſo they make no appearance; but the extreme whiteneſs of the ſtalk, leaves, and ſpikes, make a pretty variety among other tender plants during their continuance.

This plant is tender; the ſeeds ſhould be ſown in the ſpring upon a hot-bed, and the plants ſhould be treated in the ſame way as is directed for the Cockſcombs; but when the plants are fully grown, they ſhould be removed into an airy glaſs-caſe, where they may be ſcreened from cold and wet, but have free air admitted to them in warm weather, otherwiſe they will not perfect their ſeeds in this country.

In order to have large fine Amaranths, great care ſhould be taken in the choice of the ſeeds; for if they are not carefully collected, the whole expence and trouble of raiſing them will be loſt. When you are provided with good ſeeds, they muſt be ſown on a hot-bed (which ſhould have been prepared a few days before, that the violent heat may be abated) about the beginning of March; and in about a fortnight's time (if the bed is in good temper) the plants will riſe; but as they are tender when they firſt appear, they require great care for a few days till they get ſtrength; firſt, in giving them a due proportion of air, to prevent their drawing up weak; and next to keep them from too great moiſture, for a ſmall ſhare of moiſture will cauſe their tender ſtems to rot: in ſowing the ſeeds, there ſhould be care taken not to put them too cloſe, for when the plants come up in cluſters, they frequently ſpoil each other for want of room to grow: in a fortnight or three

weeks

weeks time the plants will be fit to remove, when you muſt prepare another hot-bed, covered with good rich light earth, about four inches thick; which ſhould be made a few days, that it may have a proper temperature of heat; then raiſe up the young plants with your finger, ſo as not to break off the tender roots, and prick them into the new hot-bed about four inches diſtance every way, giving them a gentle watering to ſettle the earth to their roots: but in doing this, be very cautious not to bear the young plants down to the ground by haſty watering, which rarely riſe again, or at leaſt ſo as to recover their former ſtrength in a long time, but very often rot in the ſtems, and die quite away.

After the plants are thus planted, they muſt be ſcreened from the ſun till they have taken freſh root; but as there is generally a great ſteam riſing from the fermentation of the dung, which condenſes to wet againſt the glaſſes, and this dropping upon the plants, very frequently deſtroys them; ſo the glaſſes ſhould be frequently turned in the day-time, whenever the weather will permit; but if the weather happens to prove bad, that you cannot turn your glaſſes, it will be of great ſervice to your plants, to wipe off all the moiſture two or three times a day with a woollen cloth, to prevent its dropping upon the plants. When your plants are firmly rooted, and begin to grow, you muſt obſerve to give them air every day (more or leſs, as the weather is cold or hot) to prevent their drawing up too faſt, which greatly weakens their ſtems.

In about a month or five weeks theſe plants will have grown ſo as to meet; therefore ſhould have another hot-bed, which ſhould be of a moderate temper, and covered with the ſame rich earth about ſix inches thick, in which they ſhould be planted (obſerving to take them up with as much earth about their roots as poſſible) at ſeven or eight inches diſtance every way, giving them ſome water to ſettle the earth about their roots; but be very careful not to water them heavily, ſo as to bear down the plants, (as was before directed) and keep them ſhaded in the heat of the day, until they have taken freſh root; and be ſure to refreſh them often (but gently) with water, and give them air in proportion to the heat of the weather, covering the glaſſes with mats every night, leſt the cold chill your beds, and ſtop the growth of the plants.

In the middle of May you muſt provide another hot-bed, which ſhould be covered with a deep frame, that your plants may have room to grow: upon this hot-bed, you muſt ſet as many three-penny pots as can ſtand within the compaſs of the frame; theſe pots muſt be filled with good rich earth, and the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the frame with noxious ſteams; then, with a trowel, or ſome ſuch inſtrument, take up your plants (from the former hot-bed) with as much earth as poſſible to the roots, and place each ſingle plant in the middle of one of the pots, filling the pot up with the earth before deſcribed, and ſettle it cloſe to the root of the plant with your hands; water them gently, as before, and ſhade them in the heat of the day from the violence of the ſun, by covering the glaſſes with mats; refreſh them often with water, and give them a good quantity of air in the day-time.

In about three weeks more, theſe plants will have grown to a conſiderable ſize and ſtrength, ſo that you muſt now raiſe the glaſſes very much in the day-time; and when the air is ſoft and the ſun is clouded, draw off the glaſſes, and expoſe them to the open air, and repeat this as often as the weather will permit; which will harden them by degrees, to be removed abroad into the places where they are to remain the whole ſeaſon: but it is not adviſable to ſet theſe plants out until a week in July, obſerving to do it when the air is perfectly ſoft, and if poſſible, in a gentle ſhower of rain.

Let them at firſt be ſet near the ſhelter of a hedge for two or three days, where they may be ſcreened from the violence of the ſun, and ſtrong winds, to which they muſt be inured by degrees: theſe plants, when grown to a good ſtature, perſpire very freely, and muſt be every day refreſhed with water, if the weather proves hot and dry; otherwiſe they will ſtunt, and never produce their plumes ſo fine as they would do if taken care of.

This is the proper management, in order to have fine Amaranths; which, if rightly followed, and the kinds are good, in a favourable ſeaſon, will produce wonderful large fine heads, and are the greateſt ornament to a good garden for upwards of two months: by this method, I have had plants five or ſix feet high, with creſts near a foot in breadth; and I am perſuaded, if the kind is good, (and there is no want of dung, or conveniencies) in a kindly ſeaſon, they will grow much larger.

By the middle or latter end of September, the Amaranths will have perfected their ſeeds, ſo that you muſt make choice of the largeſt, moſt beautiful, and leaſt branching plants of each kind for ſeed; which you ſhould remove under ſhelter, (eſpecially if the weather proves wet, or the nights froſty) that the ſeeds may be perfectly ripened; in the choice thereof, be ſure never to take any ſeeds from ſide branches, nor from the neck of the plume, but ſuch only as are produced in the middle thereof, which in many plants, perhaps, may be but a ſmall quantity; but I do aſſure you, it is thoſe only you can depend upon, to have your kinds good the ſucceeding year.

CELSIA. Lin. Gen. Plant. 675. The name was given to this plant in honour of Dr. Olaus Celſius, profeſſor of philoſophy and theology in the univerſity of Upſal, in Sweden, by Dr. Linnæus. We have no Engliſh name for it.

The CHARACTERS are,

It hath an obtuſe permanent empalement, which is as long as the petal, divided at the top into five parts. The flower is of one leaf, with a very ſhort tube, ſpread open above, and cut into five unequal parts; the two upper being ſmall, and the under larger. It hath four hairy ſtamina, which incline toward the upper ſegments of the petal, two of which are longer than the petal, and two are of the ſame length, terminated by ſmall roundiſh ſummits. In the center is ſituated a roundiſh germen, ſupporting a ſlender ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a roundiſh capſule compreſſed at the top, ſitting upon the empalement, having two cells which are filled with ſmall angular ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

There is but one SPECIES of this genus at preſent known, which is,

CELSIA (*Orientalis*) foliis duplicato-pinnatis. Hort. Cliff. 321. *Celſia with double winged leaves.* Verbaſcum orientale Sophiæ folio. Tourn. Cor. 8. *Eaſtern Mullein with a Flixweed leaf.*

This plant grows naturally in Armenia, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris, where they ſucceeded, and have been ſince communicated to moſt parts of Europe. In its natural place of growth, this is an annual; but in England it will rarely ripen its ſeeds, unleſs the plants come up in the autumn and live through the winter.

It ſends out many oblong leaves, which are finely divided almoſt to the mid-rib on both ſides; theſe lie flat on the ſurface of the ground, and from the center ariſes a roundiſh herbaceous ſtalk near two feet high, garniſhed the whole length with leaves of the ſame ſhape, but diminiſhing in their ſize gradually to the top: theſe are placed alternately, and at the foot-ſtalk of each come out the flowers, more than half the length of the ſtalk, which are of an iron colour on their outſide, but pale yellow within, ſpreading

ing open like thoſe of the common Mullein, but are not ſo regular; the ſhort tube being turned downward, and the lower ſegments being larger than the upper, and the ſtamina being unequal, have occaſioned Linnæus to remove it to his ringent flowers. The ſeed-veſſel is round, compreſſed, and hath two cells filled with ſmall ſeeds. It flowers in June, and the ſeeds ripen in September: if the ſeeds of this plant are ſown upon a warm dry border as ſoon as they are ripe, the plants will often come up and live through the winter, provided the ſoil is poor; for in rich ground they are apt to grow rank, and then they are generally deſtroyed by the early froſts, or will rot with much wet; but if the plants ſhould not riſe the ſame autumn, there will be little hazard of their growing the following ſpring. When the plants come up, they will require no other care but to keep them clean from weeds, and thin them if they are too cloſe; for they do not bear removing well, ſo ſhould be ſown where they are intended to remain.

I have ſometimes, when the ſeaſons have proved warm, had ripe ſeeds from plants ſown in the ſpring; but this cannot be depended on, therefore it is much better to ſow the ſeeds in autumn.

CELTIS. Tourn. Inſt. R. H. 612. tab. 383. Lin. Gen. Plant. 1012. The Lote or Nettle-tree, in French Micocoulier.

The CHARACTERS are,

It hath male and hermaphrodite flowers on the ſame tree: the hermaphrodite flowers are ſingle, and ſituated above the male. The empalement of the hermaphrodite flower is divided into five parts, in which there are no petals, but five ſhort ſtamina terminated by thick quadrangular ſummits, which have four furrows. In the center is ſituated an oval germen, ſupporting two reflexed ſtyles crowned by a ſingle ſtigma. The germen afterward becomes a round berry with one cell, incloſing a roundiſh nut. The male flowers have their empalements divided into ſix parts, and have no germen or ſtyle, but in other parts like the hermaphrodite.

This genus of plants is ranged in the firſt ſection of Linnæus's twenty-third claſs, intitled Polygamia Monœcia, from the ſame tree having male and hermaphrodite flowers.

The SPECIES are,

1. CELTIS (*Auſtralis*) foliis lanceolatis acuminatis, ſerratis, nervoſis. *Nettle-tree with ſpear-ſhaped pointed leaves, which are veined and ſawed on their edges.* Celtis fructu nigricante. Tourn. Inſt. 612. *Lote-tree with a black fruit.*
2. CELTIS (*Occidentalis*) foliis obliquè-ovatis, ſerratis, acuminatis. Lin. Sp. Plant. 1044. *Nettle-tree with oblique, oval, pointed leaves, which are ſawed on their edges.* Celtis fructu obſcurè purpuraſcente. Inſt. R. H. 612. *Lote-tree with a dark purple fruit.*
3. CELTIS (*Orientalis*) foliis ovato-cordatis, denticulatis, petiolis brevibus. *Nettle-tree with oval heart-ſhaped leaves, ſlightly indented, and ſhort foot-ſtalks.* Celtis orientalis minor, foliis minoribus & craſſioribus, fructu flavo. Inſt. Cor. 42. *Smaller Eaſtern Lote-tree with ſmaller and thicker leaves, and a yellow fruit.*
4. CELTIS (*Americana*) foliis oblongo-ovatis, obtuſis, nervoſis, ſupernè glabris, ſubtus aureis. *Nettle-tree with oblong, obtuſe, nervious leaves, which are ſmooth on their upper ſurface, and of a gold colour beneath.* Celtis foliis citrii ſubtus aureo, fructu rubro. Plum. Cat. 18. *Lote-tree with Citron leaves, of a gold colour on their under ſide, and a red fruit.*

The firſt ſort grows naturally in the ſouth of France, in Spain and Italy, where it is one of the largeſt trees of thoſe countries: yet this is not ſo plenty in England as the ſecond, nor do I remember to have ſeen but two large trees of this ſort in the Engliſh gardens; one of which was formerly growing in the Biſhop of London's garden at Fulham, but was cut down ſome years paſt, with many other curious exotic trees, which were there growing in great perfection: the other was in the garden of Dr. Uvedale at Enfield, which was there ſtanding a few years ago, when I paid a viſit to that place, which had frequently produced fruit, but was never propagated in this country; nor were there any young plants of this kind in the garden, till about fourteen years ago, when I procured a good quantity of the fruit from Italy, which I communicated to ſeveral of my friends.

This tree riſes with an upright ſtem to the height of forty or fifty feet, ſending out many ſlender branches upward, which have a ſmooth dark coloured bark, with ſome ſpots of gray; theſe are garniſhed with leaves placed alternately, which are near four inches long, and about two broad in the middle, ending in long ſharp points, and deeply ſawed on their edges, having ſeveral tranſverſe veins which are prominent on their under ſide. The flowers come out from the wings of the leaves all along the branches; they have a male and an hermaphrodite flower generally at the ſame place, the male flowers being ſituated above the others: theſe have no petals but a green herbaceous empalement, ſo make no figure; they come out in the ſpring, at the ſame time when the leaves make their firſt appearance, and generally decay before the leaves have grown to half their magnitude. After the flowers are paſt, the germen of the hermaphrodite flowers become a round berry about the ſize of a large Pea, which, when ripe, is black.

The ſecond ſort grows naturally in North America; it delights in moiſt rich ſoil, in which it becomes a very large tree. This riſes with a ſtrait ſtem, which in young trees is ſmooth and of a dark colour, but as they advance, it becomes rougher and of a lighter green. The branches are much diffuſed on every ſide, and are garniſhed with oblique oval leaves, ending in points, ſawed on their edges; they are placed alternately on the branches, with pretty long foot-ſtalks. The flowers come out oppoſite to the leaves, upon pretty long foot-ſtalks; the male flowers ſtanding above the hermaphrodite as in the other ſpecies; after theſe decay, the hermaphrodite flowers are ſucceeded by roundiſh berries, which are ſmaller than thoſe of the firſt ſort, and when ripe, are of a dark purple colour. This tree flowers in May, and the ſeeds ripen in October. Of this ſort there are ſeveral pretty large trees in the Engliſh gardens, ſome of which produce great quantities of fruit annually, which in favourable ſeaſons come to maturity, ſo that from theſe ſeeds there have been plants raiſed; and there are few years, in which there is not fruit of this ſort ſent from America, whereby it is now become pretty common in the Engliſh nurſeries.

This tree is late in coming out in the ſpring, but in recompenſe for that, it continues as long in beauty in the autumn, for it is the lateſt in fading of any of the deciduous trees; nor do the leaves alter their colour long before they fall, but continue in full verdure till within a few days of their dropping off; and, ſo ſoon as they begin to fall, the trees will in a few days be quite deſtitute of leaves, ſo that the litter which their falling leaves occaſion, may be ſooner cleared away, than that of any other deciduous tree. There is little beauty in the flowers or fruit of this tree; but, as the branches are well clothed with leaves, which are of a fine green colour, the trees, when mixed with others in wilderneſſes, make a pleaſing variety during the ſummer ſeaſon. The wood of this tree being tough and pliable, is eſteemed by coachmakers for the frames of their carriages.

The third ſort was diſcovered by Dr. Tournefort in Armenia, from whence he ſent the fruit to the royal garden at Paris, where they ſucceeded, and the trees, which were there raiſed, have produced fruit for ſeveral years, ſo that moſt of the curious gardens in Europe have been furniſhed with it from thence.

It riſes with a ſtem about ten or twelve feet high, dividing into many branches, which ſpread horizontally on every ſide, having a ſmooth greeniſh bark, garniſhed with leaves about an inch and a half long, and near an inch broad, inclining to a heart-ſhape, but

but are oblique, one of the ears of the baſe being ſmaller and lower than the other; they are of a thicker texture than thoſe of the common ſort, and of a paler green, placed alternate on the branches, and have ſhort foot-ſtalks. The flowers come out from the foot-ſtalks of the leaves, in the ſame manner as the former, and are ſucceeded by oval yellow berries, which, when fully ripe, turn of a darker colour. The wood of this tree is very white.

Theſe trees are all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, when they can be procured at that ſeaſon, for theſe frequently come up the following ſpring; whereas, thoſe which are ſown in the ſpring, will not come up till a twelvemonth after: therefore it is the beſt way to ſow them in pots or tubs, that they may be eaſily removed, for thoſe which are ſown in the ſpring ſhould be placed in a ſhady ſituation in ſummer, and conſtantly kept clean from weeds; but in autumn they ſhould be placed in a warm ſituation, plunging the pots into the ground; and if they are covered over with a little tan from a decayed hot-bed, it will prevent the froſt from penetrating the earth to injure the ſeeds; and if theſe pots are placed on a gentle hot-bed in the ſpring, it will greatly forward the vegetation of the ſeeds, whereby the plants will have more time to get ſtrength before the winter: but when the plants appear above ground they muſt have a large ſhare of air admitted to them, otherwiſe they will draw up weak; and as ſoon as the weather is warm, they muſt be expoſed to the open air, and in ſummer they muſt be conſtantly kept clean from weeds; if the ſeaſon proves dry, they will require water two or three times a week. In autumn it will be proper to remove the pots, and place them under a hot-bed frame, to ſhelter them in winter from ſevere froſt; or where there is not that conveniency, the pots ſhould be plunged into the ground near a wall or hedge; and as the plants, when young, are full of ſap, and tender, the early froſts in autumn frequently kill the upper part of the ſhoots; therefore the plants ſhould be either covered with mats, or a little ſtraw or Peaſe-haulm laid over them to protect them.

In the following ſpring the plants ſhould be taken out of the ſeed-pots, and planted in the full ground: this ſhould be done about the middle or latter end of March, when the danger of the froſt is over; therefore a bed or two ſhould be prepared (according to the number of plants raiſed) in a ſheltered ſituation, and, if poſſible, in a gentle loamy ſoil. The ground muſt be well trenched, and cleared from the roots of bad weeds, and when levelled, ſhould be marked out in lines at one foot diſtance; then the plants ſhould be carefully turned out of the pots and ſeparated, ſo as not to tear their roots, and planted in the lines at ſix inches aſunder, preſſing the earth down cloſe to the roots. If the ground is very dry when they are planted, and there is no appearance of rain ſoon, it will be proper to water the beds, to ſettle the ground to the roots of the plants; and after this, if the ſurface of the ground is covered with ſome old tan or rotten dung, it will keep it moiſt, and prevent the drying winds from penetrating to the roots of the plants.

The following ſummer, the neceſſary care muſt be to keep them conſtantly clean from weeds; but after the plants are pretty well eſtabliſhed in the ground, they will not require any water, eſpecially toward the latter end of ſummer, for that will occaſion their late growth, whereby they will be in great danger of ſuffering by the autumn froſts; for the more any of theſe young trees are ſtopped in their growth by drought towards autumn, the firmer will be their texture, ſo better able to bear the cold.

The plants may remain in theſe nurſery-beds two years, by which time they will have obtained ſufficient ſtrength to be tranſplanted where they are deſigned to remain for good, becauſe theſe plants extend their roots wide every way; ſo that if they ſtand long in the nurſery, their roots will be cut in removing, which will be a great prejudice to their future growth.

Theſe ſorts are hardy enough to thrive in the open air in England, after they are become ſtrong; but for the two firſt winters after they come up from ſeeds, they require a little protection, eſpecially the third ſort, which is tenderer than either of the former. The young plants of this ſort frequently have variegated leaves, but thoſe are more impatient of cold than the plain leaved.

The fourth ſort was firſt diſcovered by father Plumier, in the French iſlands of America; and it was found growing in Jamaica, by Dr. Houſtoun, who ſent the ſeeds to England. This riſes with a ſtrait trunk near twenty feet high, covered with a gray bark, divided into many branches upward, garniſhed with leaves near four inches long, and two and a half broad, rounded at their extremity, of a thick texture, very ſmooth on their upper ſurface, and on their under ſide are of a lucid gold colour, placed alternately on the branches. The fruit is round and red, but the flowers I have not ſeen.

The ſeeds of this ſort rarely come up the firſt year, ſo they may be ſowed in pots, and plunged into the tan-bed in the ſtove, where they ſhould remain till the plants come up. Theſe plants muſt be conſtantly kept in the bark-ſtove, and treated in the ſame manner as other tender exotics.

CENTAUREA. Lin. Gen. Plant. 880. Centaurium majus. Tourn. Inſt. R. H. 449. tab. 256. Jacea. Tourn. 443. Cyanus. Tourn. 445. Greater Centaury, Knapweed, Blue Blottle, &c.

The CHARACTERS are,

It hath a compound flower, whoſe diſk is compoſed of many hermaphrodite florets, and the borders or rays of female florets, which are larger and looſer; theſe are included in a common, roundiſh, ſcaly empalement; the hermaphrodite florets have narrow tubes, ſwelling at the top, and cut into five parts; theſe have five ſhort hairy ſtamina, terminated by cylindrical ſummits: the germen is ſituated under the petal, ſupporting a ſlender ſtyle, crowned with an obtuſe ſtigma. The germen afterward becomes a ſingle ſeed ſhut up in the empalement. The female florets have a ſlender tube, but expands above, where it is enlarged, and cut into five unequal parts; theſe are barren.

This genus of plants is ranged in the third ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Fruſtanea; the flowers of this ſection have their diſk and middle compoſed of hermaphrodite florets, which are fruitful, and their borders of female abortive florets.

The SPECIES are,

1. CENTAUREA (*Alpina*) calycibus inermibus, ſquamis ovatis obtuſis, foliis pinnatis glabris integerrimis impari ſerrato. Hort. Cliff. 421. *Centaury with an empalement without ſpines, oval obtuſe ſcales, and ſmooth winged leaves, which are entire.* Centaurium alpinum luteum. C. B. P. 117. *Yellow Alpine Centaury.*
2. CENTAUREA (*Centaurium*) calycibus inermibus, ſquamis ovatis, foliis pinnatis, foliolis ſerratis decurrentibus. Hort. Cliff. 421. *Centaury with an empalement without ſpines, oval ſcales, and winged leaves, whoſe lobes are ſawed, and run along the midrib.* Centaurium majus, folio in lacinias plures diviſo. C. B. P. 117. *Greater Centaury with a leaf divided into many parts.*
3. CENTAUREA (*Glaſtifolia*) calycibus ſcarioſis foliis indiviſis integerrimis decurrentibus. Hort. Cliff. 421. *Centaury with a ſcaly empalement, and undivided entire leaves running along the ſtalks.* Centaurium majus orientale erectum, glaſti folio, flore luteo. Tourn. Cor. 32. Com. Rar. Plant. 39. *Upright, eaſtern, greater Centaury, with a Woad leaf and a yellow flower.*
4. CENTAUREA (*Stæbe*) calycibus ciliatis oblongis, foliis pinnatifidis linearibus integerrimis. Prod. Leyd. 140. *Centaury with oblong hairy empalements, and winged pointed leaves, which are very narrow and entire.* Stæbe incana, cyano ſimilis tenuifolia. C. B. P. *Hoary Stæbe with the appearance of Blue Bottle, and a narrow leaf.*

5. Centaurea (*Conifera*) calycibus ſcarioſis, foliis tomentoſis, radicalibus lanceolatis, caulinis pinnatifidis caule ſimplici. Prod. Leyd. 142. *Centaury with a ſcaly empalement, woolly leaves, thoſe near the root being ſpear-ſhaped, thoſe on the ſtalk pointed, and a ſingle ſtalk.* Centaureum majus incanum, humile, capite pini. Tourn. Inſt. R. H. 469. *Dwarf, hoary, greater Centaury, with a head like a Pine cone.*
6. Centaurea (*Montana*) calycibus ſerratis, foliis lanceolatis decurrentibus, caule ſimpliciſſimo. Hort. Cliff. 422. *Centaury with ſawed empalements, ſpear-ſhaped running leaves, and a ſingle ſtalk.* Cyanus montanus latifolius. ſc. Verbaſculum Cyanoides. C. B. P. 273. *Greater Mountain Blue Bottle with broad leaves.*
7. Centaurea (*Anguſtifolia*) calycibus ſerratis, foliis lineari-lanceolatis decurrentibus, caule ſimplici. *Centaury with ſawed empalements, very narrow, ſpear-ſhaped, running leaves, and a ſingle foot-ſtalk.* Cyanus anguſtiore folio & longiore Belgicus. H. R. Par. *Narrower and longer leaved Belgick Blue Bottle.*
8. Centaurea (*Moſchata*) calycibus inermibus, ſubrotundis glabris, ſquamis ovatis, foliis lyrato-dentatis. Hort. Cliff. 421. *Centaury with unarmed, roundiſh, ſmooth empalements, oval ſcales, and ſinuated leaves.* Cyanus floridus odoratus, Turcicus ſive orientalis major. Park. Theat. 421. *Sweet oriental Cyanus, commonly called Sweet Sultan.*
9. Centaurea (*Amberboi*) calycibus inermibus, ſubrotundis, glabris, ſquamis ovatis obtuſis, foliis laciniatis ſerratis. *Centaury with roundiſh, ſmooth, unarmed empalements, oval obtuſe ſcales, and cut leaves, which are ſawed on their edges.* Cyanus orientalis flore luteo fiſtuloſo. Ac. R. Par. 75. *Eaſtern Cyanus with a yellow fiſtular flower, commonly called yellow Sweet Sultan.*
10. Centaurea (*Cyanus*) calycibus ſerratis, foliis linearibus integerrimis, infimis dentatis. Hort. Cliff. 422. *Centaury with ſawed empalements, very narrow entire leaves indented below.* Cyanus ſegetum. C. B. P. 273. *Corn Blue Bottle.*
11. Centaurea (*Lippii*) calycibus inermibus, ſquamis mucronatis, foliis pinnatifidis obtuſis decurrentibus. Lin. Sp. Plant. 910. *Centaury with unarmed empalements, having pointed ſcales, and winged pointed leaves, which are obtuſe, running along the ſtalk.* Cyanus Ægypticus flore parvo purpureo, caule alato. D. Lipp. *Egyptian Cyanus with a ſmall purple flower, and a winged ſtalk.*
12. Centaurea (*Cineraria*) calycibus ciliatis terminaliſeſſilibus, foliis tomentoſis pinnatifidis, lobis acutis. Hort. Cliff. 422. *Centaury with hairy empalements cloſely terminating the ſtalks, woolly leaves with winged points, and the ſegments very narrow.* Jacea montana candidiſſima, Stæbes foliis. C. B. P. 273. *White Mountain Knapweed with a Stæbe leaf.*
13. Centaurea (*Raguſina*) calycibus ciliatis, foliis tomentoſis pinnatifidis, foliolis obtuſis ovatis integerrimis exterioribus majoribus. Hort. Cliff. 422. *Centaury with hairy empalements, woolly leaves with winged points, the ſmall leaves oval and obtuſe, the outer larger.* Jacea arborea argentea Raguſina. Zan. Hiſt. 107. *Silvery-tree Knapweed of Raguſa.*
14. Centaurea (*Napifolia*) calycibus palmato-ſpinoſis, foliis decurrentibus radicalibus lyratis. Prod. Leyd. 141. *Centaury with palmated ſpinous empalements, and ſinuated prickly leaves running along the ſtalks.* Jacea cyanoides altera, alato caule. Herm. Par. 189. *Another Knapweed like Cyanus, with a winged ſtalk.*
15. Centaurea (*Rhapontica*) calycibus ſcarioſis, foliis ovato-oblongis denticulatis integris petiolatis, ſubtus tomentoſis. Hort. Cliff. 421. *Centaury with ſcaly empalements, oval, oblong, indented, entire leaves, having foot-ſtalks, woolly underneath.* Centaurium majus, folio helenii incano. Tourn. Inſt. 449. *Greater Centaury with a white Elecampane leaf.*
16. Centaurea (*Peregrina*) calycibus ſetaceo-ſpinoſis, foliis lanceolatis petiolatis, infernè dentatis. Hort. Cliff. 423. *Centaury with briſtly prickly empalements, ſpear-ſhaped leaves, with foot-ſtalks indented beneath.* Centaurium majus folio molli acuto laciniato, flore aureo magno, calyce ſpinoſo. Boerh. Ind. alt. 1. p. 144. *Greater Centaury with a ſoft, pointed, cut leaf, and a large golden flower, with a prickly empalement.*
17. Centaurea (*Orientalis*) calycibus ſquamato-ciliatis, foliis pinnatifidis, pinnis lanceolatis. Lin. Sp. Plant. 913. *Centaury with hairy ſcales to the empalement, wing-pointed leaves, whoſe lobes are ſpear-ſhaped.* Cyanus foliis radicalibus partim integris, partim pinnatis, bracteâ calycis ovali, flore ſulphureo. Hall. Act. Phil. 1745.
18. Centaurea (*Argentea*) calycibus ſerratis, foliis tomentoſis, radicalibus pinnatis, foliolis uniauritis. Lin. Sp. 1290. *Centaury with ſawed empalements, woolly leaves, thoſe near the root winged, and the lobes eared.* Jacea Cretica laciniata argentea, flore parvo flaveſcente. Tourn. Cor. 31.
19. Centaurea (*Sempervirens*) calycibus ciliatis, foliis lanceolatis ſerratis, inferioribus haſtatis. Lin. Sp. 1291. *Centaury with a hairy empalement, ſpear-ſhaped ſawed leaves, and thoſe near the root halbert-ſhaped.* Jacea Luſitanica ſempervirens.
20. Centaurea (*Splendens*) calycibus ſcarioſis obtuſis, foliis radicalibus pinnatifidis, caulinis pinnatis dentibus lanceolatis. Prod. Leyd. 142. *Centaury with a rough obtuſe empalement, the radical leaves wing-pointed, and thoſe on the ſtalk winged, ſpear-ſhaped, and indented.* Jacea caliculis argenteis major. Inſt. R. H. 444.
21. Centaurea (*Romana*) calycibus palmato-ſpinoſis, foliis decurrentibus inermibus, radicalibus pinnatifidis, impari maximo. Hort. Cliff. 423. *Centaury with a palmated ſpiny empalement, ſmooth running leaves, thoſe near the root wing-pointed, and a large terminating lobe.* Jacea ſpinoſa Cretica. Zan. Hiſt. 141.
22. Centaurea (*Sphærocephala*) calycibus palmato-ſpinoſis, foliis ovato-lanceolatis petiolatis dentatis. Hort. Cliff. 423. *Centaury with a palmated prickly empalement, and oval, ſpear-ſhaped, indented leaves, having foot-ſtalks.* Jacea ſphærocephala ſpinoſa Tingitana. H. L. 332.
23. Centaurea (*Eriophora*) calycibus duplicato-ſpinoſis lanatis, foliis ſemidecurrentibus integris ſinuatiſque caule prolifero. Hort. Upſal. 272. *Centaury whoſe empalement is downy and doubly armed with ſpines, running leaves, ſome entire, others ſinuated, and a childing ſtalk.*
24. Centaurea (*Benedicta*) calycibus duplicato-ſpinoſis lanatis involucratis, foliis ſemidecurrentibus denticulato-ſpinoſis. Lin. Sp. 1296. *Centaury whoſe empalement is downy and doubly armed with ſpines, running leaves with indentures, terminating in ſpines.* Carduus Benedictus. Camer. Epit. 562. *Bleſſed Thiſtle.*

There are many other ſpecies of this genus, which are preſerved in botanic gardens for the ſake of variety; ſome of which grow naturally in England, and are often troubleſome weeds in the fields, ſo do not deſerve a place in gardens; therefore I choſe not to trouble the reader with mentioning their titles, but have here ſelected thoſe ſpecies which have ſome beauty to recommend them.

The firſt ſort grows naturally upon the Alps. This hath a perennial root, which ſtrikes deep into the ground, ſending out a great number of long, winged, ſmooth leaves, of a glaucous colour; the ſtalks riſe near four feet high, and divide upward into many branches, garniſhed with ſmall leaves of the ſame form as the lower; each of theſe ſtalks is terminated by a ſingle head of yellow flowers, compoſed of many florets; thoſe which occupy the diſk are hermaphrodite, but thoſe of the ray are female. This flowers in June and July, and, in dry ſeaſons, will perfect their ſeeds in autumn. It may be propagated either by ſeeds, or by parting their roots in the autumn, being careful not to divide the roots too ſmall. The ſeeds ſhould be ſown in the ſpring on a bed of light earth; and when the plants are fit to remove, they ſhould be tranſplanted into a bed of freſh earth ſix inches aſunder, in which place they ſhould remain till autumn, when they ſhould be planted where they are deſigned to remain.

The ſecond ſort ſtands in the liſt of medicinal plants of the college, but is very rarely uſed; the root is reckoned

reckoned to be binding, and good for all kinds of fluxes, and of great uſe to heal wounds. This grows naturally on the mountains of Italy and Spain; it hath a ſtrong perennial root like the former ſort, from which come out a great number of long winged leaves, which ſpread wide on every ſide, of a lucid green, and ſawed on their edges; the flower-ſtalks are ſlender, but very ſtiff, and divide upward into many ſmaller foot-ſtalks; theſe, together with the other ſtalks, riſe five or ſix feet high, having at each joint one ſmall winged leaf of the ſame form with the other: each of theſe foot-ſtalks is terminated by a ſingle head of purpliſh flowers, which are conſiderably longer than the empalement. This ſort flowers in July, and in very warm dry ſeaſons will produce ripe ſeeds in England. It may be propagated by parting of the roots in the ſame manner as the former ſort, and the plants muſt be treated in the ſame way, but ſhould have more room to grow, therefore it is not proper for ſmall gardens; but in large open borders, or to intermix in open quarters with other tall growing plants, this will make a variety.

The third ſort was diſcovered by Dr. Tournefort in the Levant, who ſent the ſeeds to the royal garden at Paris, and from thence it hath ſince been communicated to moſt of the curious gardens in Europe. This hath a perennial root, which ſtrikes deep into the ground, from which ſprings up a great tuft of long entire leaves, ſhaped like thoſe of Woad, growing upright, with many upright ſtalks, which grow near five feet high, garniſhed with leaves coming out ſingle at each joint, of the ſame ſhape as the under, but are leſs, and have a border or wing running along the ſtalk. The upper part of the ſtalk divides into two or three ſmaller, each of which is terminated by a ſingle head of yellow flowers, included in a ſilvery ſcaly empalement. This flowers in July, but rarely produces good ſeeds in England. It may be propagated by parting the roots in the ſame manner as the former, and the plants may be treated in the ſame way, being equally hardy; and as this doth not ſpread ſo much as the laſt, it may be allowed a place in ſmaller gardens.

The fourth ſort grows naturally in Auſtria. This hath a perennial root as the former, from which come out many winged leaves, which are hoary, the ſegments narrow and entire; the ſtalks riſe near three feet high, dividing into ſeveral branches, which have a ſingle winged leaf at each joint, of the ſame ſhape with the other; at the end of each ſtalk is one head of purple flowers, incloſed in an oblong ſcaly empalement, each ſcale being bordered with ſmall hairs like an eye-brow. The flowers appear in June, and the ſeeds ripen in Auguſt. This is propagated by ſeeds, which may be ſown in a bed of common earth, in a nurſery; and when the plants come up they muſt be thinned, and kept clean from weeds, and the following autumn the plants may be tranſplanted where they are deſigned to remain; after which they will require no further care. Two or three of theſe plants may be allowed a place in gardens where there is room, for the ſake of variety.

The fifth ſort grows naturally in the ſouth of France, and in Italy: I received the ſeeds of this from Verona. It hath a perennial root, which doth not divide and ſpread as the former, but grows ſingle, ſending out in the ſpring ſeveral entire ſpear-ſhaped leaves, and afterward a ſingle ſtalk, more than a foot high, garniſhed at each joint with one divided hoary leaf; and at the top comes out a ſingle, large, ſcaly head, ſhaped like a cone of the Pine-tree, very taper at the top, where it cloſely ſurrounds the florets, whoſe tops juſt peep out of the empalement: they are of a bright purple colour, and appear in June, but are not ſucceeded by ſeeds in England, ſo cannot be propagated unleſs the ſeeds are procured from abroad. Theſe ſeeds may be ſown, and the plants afterward treated in the ſame manner as the laſt.

The ſixth ſort is the common perennial Blue Bottle, which by ſome is titled Batchelors Button. This is ſo well known as to need no deſcription; the roots of this ſort creep under ground to a great diſtance, whereby the plant propagates too faſt, and often becomes troubleſome in gardens. It flowers in May and June, and will grow in any ſoil and ſituation.

The ſeventh ſort differs from the eighth, in having much longer and narrower leaves, which are not ſo white, the heads of flowers are alſo ſmaller; but whether this is only a variety from the other, I cannot determine, having never raiſed either from ſeeds; for theſe plants ſpread very much by their creeping roots, which renders them barren, as is frequently the caſe with many other creeping rooted plants, few of which produce ſeeds: however, this plant has always retained its difference from the year 1727, when I firſt brought it to England; and as it propagates ſo faſt, it is now become almoſt as plenty in the gardens, as the common broad leaved ſort. This is equally hardy, and may be planted in any ſoil or ſituation, where many other ſorts will not thrive, and during its continuance in flower will make a variety in the garden.

The eighth ſort is annual, ſo is only propagated by ſeeds. This has been many years propagated in the Engliſh gardens, under the title of Sultan Flower, or Sweet Sultan. It was brought from the Levant, where it grows naturally in arable land among the corn. This ſends up a round channelled ſtalk near three feet high, which divides into many branches, garniſhed with jagged leaves, of a pale green, ſmooth, and ſtand cloſe to the branches; from the ſide of the branches come out long naked foot-ſtalks, each ſuſtaining a ſingle head of flowers ſhaped like thoſe of the other ſpecies, which have a very ſtrong odour, ſo as to be offenſive to many people, but to others is very grateful. The empalement of theſe is ſcaly, round, and without ſpines; the flowers are in ſome purple, and others white, and likewiſe a fleſh colour between them hath come from the ſame ſeeds. There is alſo a variety of this with fiſtular flowers, and another with fringed flowers, commonly called Amberboi or Emberboi: but theſe have degenerated to the common ſort in a few years, although I have ſaved the ſeeds with great care, ſo I ſuppoſe they are only varieties. Theſe ſeeds are commonly ſown upon a hot-bed in the ſpring, to bring the plants forward, and in May they are tranſplanted into the borders of the flower-garden; but if the ſeeds are ſown in a warm border in autumn, they will live through the winter; and theſe plants may be removed in the ſpring into the flower-garden, which will be ſtronger, and come earlier to flower than thoſe which are raiſed in the ſpring. The ſeeds may alſo be ſown in the ſpring on a common warm border, where the plants will riſe very well, but theſe will be later in flowering than either of the other. The autumnal plants will begin to flower the middle of June, and will continue flowering till September; and the ſpring plants will flower a month later, and continue till the froſt ſtops them. Their ſeeds ripen in autumn.

The ninth ſort has been ſuppoſed to be only a variety of the former, which is a great miſtake; for although there is a great ſimilitude in their appearance, yet they are ſpecifically different, ſo never alter. I have cultivated this ſort upward of forty years, and have never obſerved the leaſt variation in it. This is much tenderer than the former, ſo the ſeeds muſt be ſown upon a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be tranſplanted on a freſh hot-bed to bring them forward: when they have taken root in this bed, they muſt have air admitted to them every day, to prevent their drawing up weak, and refreſhed with water ſparingly, becauſe they are very apt to rot with much wet. When the plants have obtained ſtrength, they muſt be carefully taken up, and planted in ſeparate pots filled with light earth, and ſome of them placed in the ſhade till they have taken root; then they may be placed with other annual plants in the pleaſure-garden, where they will continue long in beauty. But as theſe plants which

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are placed in the open air rarely produce good ſeeds, there ſhould be two or three plants kept in a moderate hot-bed under a deep frame, where they will come earlier to flower; and being protected from wet and cold, they will ripen their ſeeds every year, which is the ſureſt method to preſerve the ſort.

This ſort differs from the common, in its leaves being ſawed on their edges; the flowers are fiſtular, of a bright colour, and have a very agreeable ſoft odour. It flowers in July and Auguſt, and the ſeeds ripen in October.

The tenth ſort is the common Blue Bottle, which grows naturally amongſt the corn in moſt parts of England: this ſtands in the liſt of medicinal plants. There is a diſtilled water of the flowers, which is eſteemed good for the eyes. There are great varieties of colours in theſe flowers, ſome of which are finely variegated: the ſeeds of theſe are ſold by ſeedſmen, by the title of Bottles of all Colours. Theſe are annual plants, which will riſe in any common border, and require no other care but to keep them clean from weeds, and thinned where they are too cloſe, for they do not thrive well when they are tranſplanted. If the ſeeds are ſown in autumn, they will ſucceed better, and the plants will flower ſtronger than thoſe which are ſown in the ſpring.

The ſeeds of the eleventh ſort were ſent me by Dr. Juſſieu, from Paris, who received them from Dr. Lippi, at Grand Cairo. This is an annual plant, which riſes near two feet high, ſending out two or three branches toward the top; the leaves are divided into many obtuſe ſegments, and have a border running along the ſtalk; the flowers are ſmall, of a bright purple, and have a ſcaly empalement. If the ſeeds are ſown in the ſpring upon a border of light earth, where the plants are to remain, they will require no farther care but to keep them clean from weeds. It flowers in July, and the ſeeds ripen in autumn.

The twelfth ſort is a perennial plant, which retains its leaves through the year. This grows naturally in Italy, on the borders of the fields. The leaves are hoary, and divided into many narrow ſegments; the ſtalks riſe near three feet high, branching upward into many diviſions, each being terminated by a head of purple flowers; theſe come out in June, and in favourable ſeaſons will perfect their ſeeds in autumn. This ſort will live abroad in moderate winters, if it has a warm ſituation and a dry ſoil; but in ſevere winters the plants are commonly killed, ſo one or two of them may be ſheltered under a common frame in winter to preſerve the kind. It may be eaſily propagated by ſeeds in the ſame manner as the fourth ſort; or if the young branches, which do not ſhoot up to flower, are cut off, and planted in a ſhady border any time in ſummer, they will take root, and in autumn may be removed to warm borders, or put into pots to be ſheltered in winter.

The thirteenth ſort grows naturally in Mauritania, and in ſeveral other places on the borders of the Mediterranean Sea. This ſeldom riſes more than three feet high in this country; it hath a perennial ſtalk, which divides into many branches, garniſhed with very white woolly leaves, divided into many obtuſe entire lobes, the ſmall leaves or lobes on the exterior part of the leaf being the largeſt. The flowers are produced from the ſide branches upon ſhort foot-ſtalks, which are of a bright yellow, and are included in a fine hairy empalement. Theſe appear in June and July, but ſcarce ever are ſucceeded by ſeeds in England. It is propagated by planting of the young ſhoots in the ſame manner as the laſt, and the plants require protection from hard froſt. But if they are planted in dry lime-rubbiſh, where they will not grow luxuriant, they will reſiſt the cold of our ordinary winters in the open air. As this plant retains its leaves all the year, which are extremely white, it makes a pretty variety in a garden.

The fourteenth ſort is annual. This grows naturally in the Archipelago. It riſes with a branching ſtalk about three feet high; the lower leaves are not much unlike thoſe of the Turnep, being rounded at their ends, and their baſe is cut into many ſegments; thoſe upon the ſtalks and branches are nearly of the ſame form, but diminiſh gradually in their ſize to the top; theſe have a border or wing running along the ſtalks, which connect them together; the flowers are produced at the end of the branches, which have prickly empalements; the ſpines come out from the border of the ſcales, divided like the fingers of a hand. The flowers are of a bright purple, ſo make a pretty appearance. This ſort may be treated in the ſame manner as the Corn Bottle, by ſowing the ſeeds in autumn, and keeping the plants clean from weeds. The plants will flower in June, and the ſeeds will ripen in Auguſt. If ſome ſeeds are alſo ſown in the ſpring, the plants will come to flower a month after the others, and will continue flowering till the froſt ſtops them. But theſe plants do not always perfect ſeeds, ſo that from the autumnal plants the ſeeds will more certainly be procured.

The fifteenth ſort grows naturally upon the Helvetian, and ſome of the Italian mountains. I received the ſeeds of this ſort from Verona: it hath a perennial root and an annual ſtalk; the leaves are oblong, ſlightly indented on their edges, and woolly on their under ſide; theſe have much the reſemblance of thoſe of Elecampane, generally ſtanding upright; the ſtalks riſe little more than a foot high, and are terminated by large ſingle heads of purple flowers, incloſed in ſcaly empalements; theſe appear in July, but unleſs the ſeaſon proves very dry and warm they have no ſeeds ſucceed them in this country; ſo that this, like the fifth ſort, is very difficult to propagate in England, unleſs good ſeeds can be procured from the countries where they naturally grow. This is very hardy, ſo may be treated in the ſame manner as any of the former perennial ſorts, but will require a little more room than the fifth.

The ſixteenth ſort grows naturally in Auſtria and Hungary, from both which countries I have received the ſeeds. The lower leaves of this plant ſpread flat on the ground; they are ſoft, hairy, and end in ſharp points, but toward their baſe are cut into ſeveral narrow ſegments; the ſtalks riſe near three feet high, garniſhed at each joint by ſpear-ſhaped entire leaves, and are terminated by ſingle large heads of flowers, of a gold colour, incloſed in a prickly ſcaly empalement. This flowers in July and Auguſt, but never produces ſeeds in this country. It hath a perennial root, which ſends out offſets; theſe may be taken from the old plants in autumn, whereby it may be eaſily propagated. It is very hardy in reſpect to cold, but ſhould have a dry ſoil, the roots being very apt to rot in winter with much wet.

The ſeventeenth ſort grows naturally in Siberia. The ſeeds of this were ſent me from Peterſburgh. This ſends out many long winged leaves from the root, which are divided into ſeveral ſpear-ſhaped lobes; the ſtalks riſe near five feet high, and divide upward into many ſmaller branches, garniſhed with leaves of the ſame form as the lower, but much ſmaller, and the ſegments very narrow; each of the ſtalks is terminated by a head of yellow flowers, incloſed in a ſcaly empalement; the borders of the ſcales are ſet with fine hairs like an eye-brow. It flowers in June, July, and Auguſt, and the ſeeds ripen in autumn. This hath a perennial root and an annual ſtalk, which, with the leaves, decay in autumn, and ariſe new from the root in the ſpring. It may be propagated either by ſeeds or parting of the roots, in the ſame manner as the fifth ſort, and the plants require a large ſhare of room, ſo ſhould not be planted too near other plants; therefore it is not proper furniture for ſmall gardens.

The eighteenth ſort grows naturally in Crete. This hath a perennial root; the lower leaves are winged and very woolly, thoſe on the flower-ſtalks are ſingle, wedge-ſhaped, and indented; the ſtalks are terminated by heads of yellow flowers, compoſed of as many

florets as the other ſorts. This flowers in July, but rarely produces ripe ſeeds in this country, ſo is propagated by ſlips as the fifth ſort; and as the plants which are expoſed to the open air in winter are frequently deſtroyed, it will be proper to place one or two of them under a common frame to preſerve the ſpecies.

The nineteenth ſort grows naturally in Portugal: the ſtalks of this are perennial; the leaves continue in verdure through the year, for which it is chiefly valued, for the flower has little more beauty than the common Knapweed. It flowers in June and July, and in warm ſeaſons the ſeeds ripen in September. It is propagated by ſeeds, which, if ſown in April in a bed of light earth, the plants will riſe eaſily. Theſe plants, in a dry ſoil and a ſheltered ſituation, will live in the open air in mild winters; but as they are frequently killed when the froſts are ſevere, it will be proper to ſhelter a plant or two under a common frame in winter to preſerve the ſpecies.

The twentieth ſort grows naturally in Spain, and upon the Helvetian mountains. This rarely continues longer than two or three years: the lower leaves are doubly wing-pointed, thoſe on the ſtalks are ſpear-ſhaped, winged, and indented; the ſtalks riſe three feet high, and are terminated by flowers like thoſe of the common Knapweed, having ſilvery empalements. It flowers in July, and the ſeeds ripen in September. If theſe are ſown in April on a bed of light earth, the plants will come up, and will live through the winter in the open air.

The twenty-firſt ſort grows naturally in the Campania of Rome. This is a biennial plant in England; thoſe plants which ariſe from ſeeds in the ſpring ſeldom flower till the following year, and when they perfect their ſeeds they die. The ſtalks of this ſort riſe three feet high; the lower leaves are wing-pointed, without ſpines; thoſe on the ſtalks run along the ſtalks like wings; the flowers are large, red, and their empalements are ſtrongly armed with ſpines. This flowers in July, and the ſeeds ripen in September. It may be propagated by ſeeds as the former.

The ſecond ſort grows naturally in Spain and Mauritania. This is an annual plant, which rarely ripens its ſeeds in England; the leaves of this are ſpear-ſhaped, indented, and woolly; the ſtalk riſes two feet high, dividing upward into three or four branches, which are terminated by pretty large heads of flowers, whoſe empalements are woolly, and ſtrongly armed with ſpines. This flowers in July, and in warm ſeaſons the ſeeds ripen in September. It is propagated by ſeeds as the two former ſorts.

The twenty-third ſort grows naturally in Portugal. The ſtalk of this riſes two feet high, garniſhed with woolly leaves; ſome of which are entire, others are ſinuated on their borders; the ſtalks are terminated by woolly heads of flowers, ſtrongly armed with double ſpines on the empalement, which almoſt incloſes the florets. It flowers in July, and in warm ſeaſons the ſeeds ripen in September. It is propagated by ſeeds as the former.

The twenty-fourth ſort is the Carduus Benedictus, or Bleſſed Thiſtle, which is frequently uſed as an emitic. It grows naturally in Spain and the Levant; in England it is propagated in gardens for medicinal uſe. It is an annual plant, which periſhes ſoon after the ſeeds are ripe. The ſureſt method of cultivating this plant, is to ſow the ſeeds in autumn; and when the plants come up, to hoe the ground, to cut up the weeds, and thin the plants; and in the following ſpring to hoe it a ſecond time, leaving the plants a foot aſunder, which will ripen their ſeeds in autumn, and ſoon after decay.

CENTAURIUM MINUS. See GENTIANA.

CENTINODIUM, Knot Graſs. See POLYGONUM.

CEPA, the Onion.

The botanical characters of this genus are the ſame with thoſe of Allium, to which it is now joined by the late ſyſtem; but as this work is intended for the inſtruction of ſuch as are not well acquainted with the ſcience of botany, or who may have no inclination to ſtudy it, and yet may want information how to cultivate the plants which are uſeful in the kitchen, I have choſen to treat of theſe under their former appellation. Mr. Ray and Tournefort admit of the fiſtular leaves and ſwelling ſtalks, as characters to diſtinguiſh the plants of this genus from Porrum and Allium.

The VARIETIES of the common Onion are,

The Straſburgh. Cepa oblong. C. B. P. 71.

The Spaniſh Onion. Cepa vulgaris, floribus & tunicis purpuraſcentibus. C. B. P. 71.

The white Egyptian Onion. Cepa floribus & tunicis candidis. C. B. P. 71.

All theſe vary from ſeeds, ſo that there are ſeveral intermediate differences which are not worth enumerating.

Theſe three varieties are propagated by ſeeds, which ſhould be ſown at the latter end of February or the beginning of March, on good, rich, light ground, which ſhould be well dug and levelled, and cleared from the roots of all bad weeds; then the ſeeds ſhould be ſown in a dry time, when the ſurface of the ground is not moiſt; and where they are intended for a winter crop, they muſt not be ſown too thick. The common allowance of ſeed is ſix pounds to an acre of land; but the generality of gardeners ſow more, becauſe many of them allow for a crop to draw out, which they call cullings; theſe are all ſuch as want to be removed from others, ſo are thinned out when young, and tied in bunches for the market; but thoſe who have regard to their principal crop, never practiſe this; therefore ſow no more ſeeds than is ſufficient, which is the quantity before-mentioned, for when the plants come up too cloſe, they draw each other weak; and when this happens, their roots never grow ſo large as thoſe which are thin: beſides, there is a greater trouble in hoeing them; and when they are thinned for the market, the ground is trodden over, and the Onions which are to ſtand have their leaves bruiſed, whereby they are greatly injured; ſo that where young Onions are wanted, it is a much better way to ſow ſome ſeparate beds for this purpoſe, than to injure the future crop.

In about ſix or ſeven weeks after ſowing, the Onions will be up forward enough to hoe; at which time (chooſing dry weather) you ſhould, with a ſmall hoe about two inches and a half broad, cut up lightly all the weeds from amongſt the Onions; and alſo cut out the Onions where they grow too cloſe in bunches, leaving them at this firſt hoeing at leaſt two inches apart. This, if well performed, and in a dry ſeaſon, will preſerve the ground clear of weeds at leaſt a month or five weeks; when you muſt hoe them over a ſecond time, cutting up all the weeds as before, and alſo cut out the Onions to a larger diſtance, leaving them this time three or four inches aſunder. This alſo, if well performed, will preſerve the ground clean a month or ſix weeks longer, when you muſt hoe them over the third and laſt time.

Now you muſt carefully cut up all weeds, and ſingle out the Onions to near ſix inches ſquare; by which means they will grow much larger, than if left too cloſe. This time of hoeing, if the weather proves dry and it is well performed, will keep the ground clean until the Onions are fit to pull up; but if the weather ſhould prove moiſt, and any of the weeds ſhould take root again, you ſhould, about a fortnight or three weeks after, go over the ground and draw out all the large weeds with your hands; for the Onions having now begun to bulb, they ſhould not be diſturbed with a hoe.

Toward the middle of Auguſt your Onions will have arrived to their full growth, which may be known by their blades falling to the ground and ſhrinking; you ſhould therefore, before their necks or blades are withered off, draw them out of the ground, cropping off the extreme part of the blade, and lay them abroad upon a dry ſpot of ground to dry, obſerving to turn them over every other day at leaſt, to prevent their

ſtriking freſh root into the ground; which they will ſuddenly do, eſpecially in moiſt weather.

In about a fortnight's time your Onions will be dry enough to houſe, which muſt be performed in perfect dry weather; in doing of this, you muſt carefully rub off all the earth from the roots, and be ſure to mix no faulty ones amongſt them, which will in a ſhort time decay, and ſpoil all thoſe that lie near them; nor ſhould you lay them too thick in the houſe, which would occaſion their ſweating, and thereby rot them; nor ſhould they be put in a lower room, or ground floor, but in a loft or garret; and the cloſer they are kept from the air, the better they will keep. You ſhould, at leaſt, once a month, look over them to ſee if any of them are decayed; which if you find, muſt be immediately taken away, otherwiſe they will infect all that lie near them.

But notwithſtanding all the care you can poſſibly take in the drying and houſing of your Onions, many of them will grow in the loft, eſpecially in mild winters, which are generally moiſt; therefore thoſe who would preſerve them late in the ſeaſon, ſhould ſelect a parcel of the firmeſt and moſt likely to keep from the others, and with a hot iron ſlightly ſinge their beards, or roots, which will effectually prevent their ſprouting; but in doing of this there muſt be great caution uſed not to ſcorch the pulp of the Onions, for that will cauſe them to periſh ſoon after.

The beſt Onions for keeping are the Straſburgh kind, which is an oval-ſhaped bulb; but this ſeldom grows ſo large as the Spaniſh, which is flatter; the white ſort is eſteemed the ſweeteſt; but theſe varieties are not laſting; for if you ſave ſeeds of white Onions only, you will have a mixture of the red ones amongſt them; nor will the Straſburgh Onion keep long to its kind, but will by degrees grow flatter, as do the large Portugal Onions, when planted in our climate, which in a year or two will be ſo far degenerated, as not to be known they were from that race.

But in order to ſave ſeeds, you muſt in the ſpring make choice of ſome of the firmeſt, largeſt, and beſt ſhaped Onions (in quantity proportionable to the ſeed you intend to ſave;) and having prepared a piece of good ground (which ſhould be well dug, and laid out in beds about three feet wide,) in the beginning or middle of March you muſt plant your Onions in the following manner. Having ſtrained a line about four inches within the ſide of the bed, you muſt, with a ſpade, throw out an opening about ſix inches deep, the length of the bed, into which you ſhould place the Onions, with their roots downward, at about nine inches diſtance from each other; then with a rake draw the earth into the opening again to cover the bulbs; then proceed to remove the line again about a foot farther back, where you muſt make an opening as before, and ſo again till the whole is finiſhed; ſo that you will have four rows in each bed, between which you muſt allow a ſpace of two feet for an alley to go among them to clear them from weeds, &c. In a month's time their leaves will appear above ground, and many of the roots will produce three or four ſtalks each; you muſt therefore keep them diligently cleared from weeds, and about the beginning of June, when the heads of the flowers begin to appear upon the tops of the ſtalks, you muſt provide a parcel of ſtakes about four feet long, which ſhould be driven into the ground, in the rows of Onions, at about ſix or eight feet apart; to which you ſhould faſten ſome packthread, rope yarn, or ſmall cord, which ſhould be run on each ſide the ſtems of the Onions, a little below their heads, to ſupport them from breaking down with the wind and rain; for when the ſeeds are formed, the heads will be heavy, and ſo are very often broken down by their own weight, where they are not well ſecured; and if the ſtalks are broken before the ſeeds have arrived to maturity, they will not be near ſo good, nor keep ſo long as thoſe which are perfectly ripened.

About the end of Auguſt the Onion ſeed will be ripe, which may be known by its changing brown, and the cells in which the ſeeds are contained opening; ſo that if it be not cut in a ſhort time, the ſeeds will fall to the ground: when you cut off the heads, they ſhould be ſpread abroad upon coarſe cloths in the ſun, obſerving to keep it under ſhelter in the night, as alſo in wet weather; and when the heads are quite dry, you muſt beat out the ſeeds, which are very eaſily diſcharged from their cells; then having cleared it from all the huſk, &c. after having expoſed it one day to the ſun to dry, you muſt put it up in bags to preſerve it for uſe.

The directions here given is for the general crop of winter Onions; but there are two other crops of this common ſort of Onion, cultivated in the gardens about London to ſupply the market, one of which is commonly called Michaelmas Onions. Theſe are ſown in beds pretty cloſe, the middle of Auguſt, and muſt be well weeded when they come up. In the ſpring of the year, after the winter Onions are over, they are tied up in bunches to ſupply the markets; but from the thinning of theſe they carry to market young green Onions in March, for ſallads, &c.

And in the ſpring they ſow more beds in the ſame manner, to draw up young for ſallads, after the Michaelmas Onions are grown too large for that purpoſe; and where a ſupply of theſe are required, there may be three different ſowings, at about three weeks diſtance from each other, which will be ſufficient for the ſeaſon.

There are alſo the following ſorts of Onions cultivated in the kitchen-gardens.

The Shallot, or Eſchalottes, which is the Cepa Aſcalonica. Matth. 556.

The Ciboule, or Cepa fiſſilis. Matth. Lugd. 1539.

The Cives, or Cepa ſectilis juncifolia perennis. Mor. Hiſt. 2. 383.

The Welch Onion I ſuppoſe to be the ſame with the Ciboule, although they paſs under different appellations; for I have ſeveral times received the Ciboule from abroad, which, when planted, prove to be what is generally known here by the title of Welch Onions. There is alſo a great affinity between the Eſchalottes and theſe, ſo that they are not well diſtinguiſhed yet; for although they are generally cultivated in the gardens, yet they are not well known to the botaniſts, ſome of whom have ſuppoſed a greater variety than is in nature; while others have joined them together, making but two ſpecies.

The Scallion, or Eſcallion, is a ſort of Onion which never forms any bulbs at the roots, and is chiefly uſed in the ſpring for green Onions, before the other ſorts, ſown in July, are big enough; but this ſort of Onion, how much ſoever in uſe formerly, is now ſo ſcarce as to be known to few people, and is rarely to be met with, except in curious botanic gardens: the gardeners near London ſubſtitute another ſort for this, which are thoſe Onions which decay and ſprout in the houſe: theſe they plant in a bed early in the ſpring, which in a ſhort time will grow large enough for uſe; when they draw them up, and after pulling off all the outer coat of the root, they tie them up in bunches, and ſell them in the market for Scallions.

The true Scallion is eaſily propagated by parting the roots, either in ſpring or autumn; but the latter ſeaſon is preferable, becauſe of their being rendered more fit for uſe in the ſpring: theſe roots ſhould be planted three or four in a hole, at about ſix inches diſtance every way, in beds or borders three feet wide, which in a ſhort time will multiply exceedingly, and will grow upon almoſt any ſoil and in any ſituation; and their being ſo hardy as to reſiſt the ſevereſt of our winters, and being green, and fit for uſe ſo early in the ſpring, renders them worthy of a place in all good kitchen-gardens.

The Cives are a very ſmall ſort of Onion, which never produce any bulbs, and ſeldom grow above ſix inches high in the blade, which is alſo very ſmall and ſlender, and are in round bunches like the former; this

this was formerly in great requeſt for ſallads in the ſpring, as being milder than thoſe Onions which had ſtood through the winter; theſe are propagated by parting their roots like the former, and are alſo very hardy, and will be fit for uſe early in the ſpring.

The Welch Onions are only propagated for ſpring uſe alſo; theſe never make any bulb, and are therefore only fit to be uſed green for ſallads, &c. They are ſown about the end of July, in beds of about three feet and a half wide, leaving alleys of two feet broad to go between the beds to clean them, and in a fortnight's time they will appear above ground, when they muſt be carefully cleared from weeds; towards the middle of October their blades will die away, ſo that the whole ſpot will ſeem to be naked, which hath led many people to dig up the ground again, ſuppoſing the crop totally loſt; whereas, if they ſtand undiſturbed, they will come up again very ſtrong in January, and from that time grow very vigorouſly, reſiſting all weathers; and by March will be fit to draw for young Onions, and are, in the markets, more valued than any other ſort at that ſeaſon; for they are extremely green and fine, though they are much ſtronger than the common Onion in taſte, approaching nearer to Garlick, which hath occaſioned their being leſs eſteemed for the table: but as no winter, however hard, will hurt them, it is proper to have a few of them to ſupply the table, in caſe the common ſort ſhould be deſtroyed by froſts.

The roots of theſe Onions, if planted out at ſix or eight inches diſtance, in March, will produce ripe ſeeds in autumn, but it will be in ſmall quantities the firſt year; therefore the ſame roots ſhould remain unremoved, which the ſecond and third year will produce many ſtems, and afford a good ſupply of ſeeds; theſe roots will abide many years good, but ſhould be tranſplanted and parted every ſecond or third year, which will cauſe them to produce ſtrong ſeeds.

CEPHALANTHUS. Lin. Gen. Plant. 105. Platanocephalus. Vaill. Acad. R. Scien. 1722. Button Wood.

The CHARACTERS are,

It hath a number of ſmall flowers, which are collected into a ſpherical head; theſe have no common empalement, but each particular flower hath a funnel-ſhaped empalement, divided into four parts at the top; the flower is funnel-ſhaped, of one petal, divided at the top into four parts, incloſing four ſtamina, which are inſerted in the petal, and are ſhorter than the tube, being terminated by globular ſummits. The germen is ſituated under the flower, ſupporting a ſtyle which is longer than the petal, and is crowned by a globular ſtigma; the germen afterward becomes a globular hairy capſule, incloſing one or two oblong angular ſeeds; theſe are joined to an axis, and form a round head.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and but one ſtyle.

We have but one SPECIES of this plant, viz.

CEPHALANTHUS (*Occidentalis*) foliis oppoſitis terniſque. Flor. Virg. 15. *Button-tree with leaves growing oppoſite, and ſometimes by threes.* Scabioſa dendroides Americana ternis foliis caulem ambientibus, floribus ochroleucis. Pluk. Alm. 336. tab. 77.

This ſhrub grows naturally in North America, from whence the ſeeds are annually ſent to Europe, and of late years great numbers of the plants have been raiſed in the gardens of the curious; but there are no very large plants in the Engliſh gardens; the largeſt I have ſeen are in the curious gardens of his grace the Duke of Argyle, at Whitton, near Hounſlow, where they thrive better than in almoſt any other place where they have been planted, ſo that in a moiſt ſoil they will do the beſt.

This ſeldom riſes higher than ſix or ſeven feet in this country. The branches come out by pairs, oppoſite at each joint; the leaves alſo ſtand oppoſite, ſometimes by pairs, and at other times there are three ariſing at the ſame joint, ſtanding round the branch; theſe are near three inches long, and one and a quarter broad, having a ſtrong vein running longitudinally through the middle, and ſome ſmall tranſverſe veins from that to the borders; they are of a light green, and their foot-ſtalks change to a reddiſh colour next the branches; the ends of the branches are terminated by looſe ſpikes of ſpherical heads, about the ſize of a marble, each of which are compoſed of many ſmall flowers, which are funnel-ſhaped, of a whitiſh yellow colour, faſtened to an axis which ſtands in the middle; theſe appear in July, and, in warm ſeaſons, are ſucceeded by ſeeds, which have ſometimes ripened in England.

Theſe plants are propagated chiefly by ſeeds (though there has been ſome raiſed from cuttings and layers;) theſe ſhould be ſown in pots, for the greater conveniency of removing them either into a ſhady ſituation, or where they may have ſhelter. If the ſeeds can be procured ſo early as to ſow them before Chriſtmas, the plants will come up the following ſummer; but if they are ſown in the ſpring, they generally remain a year in the ground; therefore, in ſuch caſe, the pots ſhould be placed in the ſhade that ſummer, and in the autumn following removed under a common frame to ſhelter them from froſt, and the ſpring following the plants will come up.

The firſt year, when the plants come up, it will be neceſſary to ſhade them in hot dry weather, while they are young, at which time they are often deſtroyed by being too much expoſed; nor ſhould the watering be neglected; for as theſe plants naturally grow on moiſt ground, ſo when they are not duly watered in dry weather, the young plants will languiſh and decay.

The next autumn, when the leaves begin to drop, the young plants may be tranſplanted into nurſery-beds, which ſhould be a little defended from the cold winds; and, if the ſoil is moiſt, they will ſucceed much better than in dry ground; but where it happens otherwiſe, it will be abſolutely neceſſary to water them in dry weather, otherwiſe there will be great danger of the plants dying in the middle of ſummer, which has been the caſe in many gardens where theſe plants were raiſed.

In theſe nurſery-beds the plants may remain a year or two (according to the progreſs they may have made, or the diſtance they were planted;) then they may be taken up in October, and tranſplanted where they are to remain for good. Although I have mentioned but one ſeaſon for tranſplanting them, yet this may alſo be performed in the ſpring, eſpecially if the ground is moiſt into which they are removed, or that the plants are duly watered, if the ſpring ſhould prove dry, otherwiſe there will be more hazard of their growing when removed at this ſeaſon.

Theſe plants make a pretty variety among other hardy trees and ſhrubs, being extreme hardy in reſpect to cold; but they delight in a moiſt light ſoil, where they will grow very faſt, and their leaves will be larger than in dry land.

CERASTIUM. Lin. Gen. Plant. 518. Mouſe-ear, or Mouſe-ear Chickweed; in French, *Oreille de Souris.*

The CHARACTERS are,

It hath a permanent five-leaved empalement, which ſpreads open; the flower hath five obtuſe bifid petals, which are as large as the empalement. It hath ten ſlender ſtamina ſhorter than the petals, terminated by roundiſh ſummits. In the center is ſituated an oval germen, from which ariſe five ſtyles, which are hairy, erect, and crowned with obtuſe ſtigma; the empalement afterward becomes an oval, cylindrical, or globular capſule with one cell, opening at the top, containing many roundiſh ſeeds.

This genus of plants is ranged in the fourth ſection of Linnæus's tenth claſs, intitled Decandria Pentagynia, the flower having ten ſtamina and five ſtyles.

The SPECIES are,

1. CERASTIUM (*Repens*) foliis lancolatis, pedunculis ramoſis, capſulis ſubrotundis. Lin. Sp. Plant. 439. *Ceraſtium with ſpear-ſhaped leaves, branching foot-ſtalks, and roundiſh capſules.* Myoſotis incana repens. Tourn. Inſt. R. H. 245. *Hoary creeping Mouſe-ear, by ſome called Sea Pink.*
2. CERASTIUM (*Tomentoſum*) foliis oblongis, tomentoſis, pedunculis ramoſis, capſulis globoſis. Lin. Sp. Plant. 440. *Ceraſtium with oblong woolly leaves, branching foot-ſtalks, and globular capſules.* Myoſotis tomentoſa, linariæ folio anguſtiore. Tourn. Inſt. R. H. 245. *Woolly Mouſe-ear with a narrow Toad-flax leaf.*
3. CERASTIUM (*Dichotomum*) foliis lanceolatis, caule dichotomo ramoſiſſimo, capſulis erectis. Prod. Leyd. 450. *Ceraſtium with ſpear-ſhaped leaves, a very branching ſtalk divided in forks, and upright capſules.* Myoſotis Hiſpanica ſegetum. Tourn. Inſt. R. H. 545. *Spaniſh Corn Mouſe-ear, or Horned Chickweed.*
4. CERASTIUM (*Pentandrum*) floribus pentandriis, petalis integris. Lin. Sp. Plant. 438. *Ceraſtium with flowers having five ſtamina, and entire petals.*
5. CERASTIUM (*Perfoliatum*) foliis connatis. Hort. Cliff. 173. *Ceraſtium whoſe leaves are joined.* Myoſotis Orientalis perfoliata folio lychnidis. Tourn. Cor. 18. *Eaſtern perfoliated Mouſe-ear with a Lychnis leaf.*

The firſt ſort grows naturally in France and Italy, and was formerly cultivated in the Engliſh gardens under the title of Sea Pink; one of the uſes made of it was to plant it as an edging to keep up the earth of borders; but this was before the Dwarf Box was brought to England, ſince which all thoſe plants which were formerly applied for this purpoſe have been neglected. This plant was by no means fit for this uſe, becauſe its creeping branches would ſpread into the walks where they put out roots into the gravel; ſo that unleſs they are frequently cut off, they cannot be kept within compaſs.

This ſends out many weak ſtalks which trail upon the ground, and put out roots at their joints, whereby it propagates very faſt; the leaves are placed by pairs oppoſite, which are about two inches long, and little more than half an inch broad, very hoary; thoſe next the root are much ſmaller than the upper; the flowers come out from the ſide of the ſtalks upon ſlender foot-ſtalks, which branch out into ſeveral ſmaller, each ſupporting a white flower, compoſed of five petals, which are ſplit at the top. The whole flower has the appearance of Chickweed flowers, but are larger; it flowers in May.

It propagates too faſt by its creeping roots and trailing branches, when it is admitted into gardens, ſo may be planted in any ſoil or ſituation; and is very proper to be planted between ſtones on the ſide of grottos, where it will ſpread, and thrive without care.

The ſeeds of the ſecond ſort I received from Iſtria, where it naturally grows; this is by Parkinſon titled hoary narrow-leaved Pink. The leaves of this ſort are narrower than thoſe of the former, and are much whiter; the ſtalks grow more erect, and the ſeed-veſſels are rounder, in which their chief difference conſiſts. This is a trailing plant, and propagates by ſending out roots at the joints, in the ſame manner as the former, and is equally hardy. It flowers in May and June, and the ſeeds ripen in Auguſt.

The third ſort is annual; this grows naturally on arable land in Spain, from whence the ſeeds were ſent to England, where it is allowed a place in botanic gardens for the ſake of variety, but hath not much beauty; this hath branching ſtalks, which grow about ſix inches high, dividing by pairs in forks, the flowers coming out in the middle of the diviſions, which are ſhaped like thoſe of Chickweed; the whole plant has a clammy moiſture, which ſticks to the fingers of thoſe who handle it. This flowers in May, and the ſeeds ripen in July. If the ſeeds are ſown in autumn, they will ſucceed better than in the ſpring; or if they are permitted to fall, the plants will riſe without care.

The fourth ſort is very like the third in its whole appearance, and differs from it, in having but five ſtamina in the flower, whereas the other hath ten. This was diſcovered by Mr. Lœfling, a pupil of Dr. Linnæus's, in Spain, from whence he ſent the ſeeds to Upſal, part of which were ſent me by the Doctor.

The fifth ſort was diſcovered by Dr. Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris, where they ſucceeded, and have been ſince communicated to moſt of the curious botanic gardens in Europe. This is an annual plant, which riſes with an upright ſtalk a foot high; the lower leaves of this plant have much reſemblance to thoſe of the Lychnis, which is called Lobel's Catchfly, ſo that when the plants are young, it is not eaſy to diſtinguiſh them. The ſtalks are garniſhed with leaves of the ſame ſhape, but ſmaller, placed by pairs, and embrace the ſtalks at their baſe. The flowers come out at the top of the ſtalks, and alſo from the wings of the leaves, on the upper part of the ſtalks, which are white, and ſhaped like thoſe of Chickweed. They appear in May and June, and are ſucceeded by beaked capſules, containing many roundiſh ſeeds.

If the ſeeds of this ſort are ſown in autumn, they will more certainly grow than thoſe which are ſown in the ſpring; or if the ſeeds are permitted to ſcatter, the plants will come up and live through the winter, and will require no other care but to keep them clean from weeds.

There are many other ſpecies of this genus than are here enumerated, which are weeds in many parts of England, ſo are never cultivated in gardens, therefore not worthy of notice here.

CERASUS [κέρασος, *Gr.* ſo called according to Servius, from Ceraſus, a city of Pontus, which Lucullus having deſtroyed, he carried the Cherry-tree from thence to Rome, and called it Ceraſus, after the name of the city; but others will have it that the city took its name from the abundance of thoſe trees which grew there.] The Cherry-tree.

The botanical characters of this genus, according to the ſyſtem of Linnæus, are the ſame with thoſe of Prunus; therefore he has joined the Apricot Cherry, Laurel, and Bird Cherry together, making them only ſpecies of the ſame genus; but thoſe who admit of the fruit, as a character to determine the genus, muſt ſeparate the Cherry from the others, becauſe they differ greatly in the ſhape of their ſtones; but there is a more eſſential difference in nature between them, which is, that the Cherry will not grow upon a Plumb-ſtock, by budding or grafting, nor will the Plumb take upon a Cherry-ſtock; and yet we know of no trees of the ſame genus which do not unite with each other, by budding or grafting.

However, as the joining ſo many genera into one, would occaſion great confuſion among gardeners, who cultivate theſe trees for ſale, therefore if there were no other motive than that, it would be a ſufficient excuſe for not cloſely following that ſyſtem in this work, which is deſigned for the inſtruction of thoſe who have not made botany their ſtudy; ſo I ſhall refer the reader to the article PRUNUS, under which the botanical characters will be inſerted, and proceed to the ſpecies.

I ſhall firſt enumerate the ſorts which are ſpecifically different from each other, and then mention the varieties of theſe fruits, which are cultivated in the Engliſh gardens; many of which ſeem to differ ſo eſſentially from each other, that they may be allowed as ſpecific differences; but as I have not had an opportunity of trying the various ſorts from ſeeds, to ſee if they alter, ſo I choſe to inſert them only as varieties, till further obſervation may better ſettle their boundaries.

The SPECIES are,

1. CERASUS (*Vulgaris*) foliis ovato-lanceolatis, ſerratis. *The common, or Kentiſh Cherry.* Ceraſus ſativa rotunda rubra & acida. C. B. P. 449. *Manured Cherry with round, red, acid fruit.*

2. Cerasus (*Nigra*) foliis ſerratis lanceolatis. *Cherry-tree with ſpear-ſhaped ſawed leaves.* Ceraſus major ac ſylveſtris, fructu ſubdulci nigro colore inficiente. C. B. P. 450. *Greater wild Cherry-tree with a ſweetiſh fruit, whoſe juice affords a black colour.*
3. Cerasus (*Hortenſis*) foliis ovato-lanceolatis, floribus confertis. *Cherry-tree with oval ſpear-ſhaped leaves, and flowers growing in cluſters.* Ceraſus racemoſa hortenſis. C. B. P. 450. *Commonly called the Cluſter Cherry.*
4. Cerasus (*Mahaleb*) floribus corymboſis, foliis ovatis. Lin. Sp. Plant. 474. *Cherry-tree with flowers growing in round bunches, and oval leaves.* Ceraſus ſylveſtris amara, mahaleb putata. J. B. *The Mahaleb or perfumed Cherry.*
5. Cerasus (*Canadenſis*) foliis lanceolatis, glabris, integerrimis, ſubtus, cæſiis, ramis patulis. *Cherry-tree with ſmooth, ſpear-ſhaped, entire leaves, of a bluiſh green on their under ſide, and ſpreading branches.* Ceraſus pumila Canadenſis, oblongo anguſto folio fructu parvo. Du Hamel. *Dwarf Canada Cherry, with oblong narrow leaves, and a ſmall fruit, called Ragouminier, Nega, or Minel in Canada.*

The firſt ſort is the common or Kentiſh Cherry, which is ſo well known in England as to need no deſcription. From this ſort it hath been ſuppoſed many of the varieties which are cultivated in the Engliſh gardens, have been raiſed; but as there are very great differences in the ſize and ſhape of their leaves, as alſo in the ſhoots of the trees from thoſe of this ſort, I think it is very doubtful, where the boundaries of their ſpecific differences terminate: however, I ſhall comply with the generality of modern botaniſts, in ſuppoſing the following ſorts to have been produced from the ſeeds of this, as we have not ſufficient experiments to determine otherwiſe.

The Early May Cherry.	The Ox Heart.
The May Duke Cherry.	The Lukeward.
The Archduke Cherry.	The Carnation.
The Flemiſh Cherry.	The Hertfordſhire Heart.
The Red Heart.	The Morello.
The White Heart.	The Bleeding Heart.
The Black Heart.	Yellow Spaniſh Cherry.
The Amber Heart.	

Two ſorts with double flowers, one larger and fuller than the other. Theſe are propagated for ornament.

The ſecond ſort above-mentioned is the Black Cherry, which is ſuppoſed to be a native of England. This grows to be a large tree, fit for timber, and is frequently found growing as ſuch in the woods. From this, the only varieties which I have ever known raiſed by ſeeds, are the Black Coroun, and the ſmall Wild Cherry; of which there are two or three varieties, which differ in the ſize and colour of their fruit.

Theſe Wild Cherries are very proper to plant in parks, becauſe they grow to a large ſize, and make beautiful trees; and in the ſpring, when they are in flower, will be very ornamental. The fruit of them will be good food for birds, and when the trees are cut down, the wood is very uſeful for turners. Theſe trees will thrive in poor land better than moſt other ſorts, ſo there is an advantage in propagating them in thoſe places. The French often plant them for avenues to their houſes, upon ſuch land where they cannot get any other trees to thrive; they alſo cultivate them in their woods to cut for hoops, and greatly eſteem them for this purpoſe.

The ſtones of this ſort are generally ſown for raiſing ſtocks to graft or bud the other ſorts of Cherries upon, being of quicker growth, and of longer duration than either of the other, ſo are very juſtly eſteemed and preferred to them.

The wood of the fourth ſort, is by the French greatly eſteemed for making of cabinets, becauſe it hath an agreeable odour. This, and the wood of the Bird Cherry, are often blended together, and paſs under the appellation of Bois de Sainte Lucie; but the Bird Cherry is the true ſort.

The fifth ſort was brought from Canada, where it grows naturally, to the gardens in France, where it is cultivated as a flowering ſhrub for ornament. The ſtones of this were ſent me by Dr. Bernard de Juſſieu, profeſſor of botany at Paris, which ſucceeded very well in the Chelſea garden; but by comparing this with a ſpecimen of the old Chamæceraſus, or Ceraſus humilis of Gerard, and other old writers, I find it to be the ſame plant, for it alſo agrees exactly with their deſcriptions of it.

This is a low ſhrub, which ſeldom grows more than three or four feet high, ſending out many horizontal branches, which ſpread near the ground on every ſide; and the lower branches are very ſubject to lie in the ground, where they will put out roots, and thereby multiply. The young branches have a very ſmooth bark, inclining toward red; the leaves are long, narrow, very ſmooth, and entire, having the appearance of ſome ſorts of Willow leaves, of a light green on their upper ſide, but of a bluiſh or ſea-green on their under: the flowers come out from the ſide of the branches, two, three, or four ariſing at the ſame joint moſt part of the length of the young ſhoots; theſe are ſhaped like thoſe of the common Cherry, but are ſmaller, ſtanding upon long ſlender foot-ſtalks. The fruit is like thoſe of the ſmall wild Cherry, but hath a bitteriſh flavour. It flowers about the ſame time as the other ſorts of Cherries, and the fruit ripens in July; theſe fruit are good food for birds, and the French plant them among their other ſhrubs, to entice the birds to harbour there.

It is eaſily propagated by laying down the branches early in the ſpring, which will take root by the following autumn, when they may be taken off, and either planted in a nurſery to get ſtrength, or to the places where they are deſigned to remain. It may alſo be propagated by ſowing the ſtones, in the ſame manner as other Cherries.

All the ſorts of Cherries which are uſually cultivated in fruit-gardens, are propagated by budding or grafting the ſeveral kinds into ſtocks of the Black or wild Red Cherries, which are ſtrong ſhooters, and of longer duration than any of the garden kinds. The ſtones of theſe two kinds are ſown in a bed of light ſandy earth in autumn (or are preſerved in ſand till ſpring, and then ſowed.) When theſe ſtocks ariſe they muſt be carefully weeded, and if in dry weather you refreſh them with water, it will greatly promote their growth. Theſe ſtocks ſhould remain in the nurſery-beds till the ſecond autumn after ſowing; at which time you ſhould prepare an open ſpot of good freſh earth, which ſhould be well worked; but if the ſoil is freſh, it will be the better. In this ground, in October, you ſhould plant out the young ſtocks at three feet diſtance row from row, and about a foot aſunder in the rows, being careful in taking them up from their ſeed-beds to looſen their roots well with a ſpade, to prevent their breaking, as alſo to prune their roots; and if they are inclinable to root downwards, you ſhould ſhorten the tap-root to cauſe it to put out lateral roots; but do not prune their tops, for this is what by no means they will endure.

The ſecond year after planting out, if they take to growing well, they will be fit to bud, if they are intended for dwarfs: but if they are for ſtandards, they will not be tall enough until the fourth year; for they ſhould be budded or grafted near ſix feet from the ground, otherwiſe the graft will not advance much in height; ſo that it will be impoſſible to make a good tree from ſuch as are grafted low, unleſs the graft is trained upward.

The uſual way with the nurſery gardeners is to bud their ſtocks in ſummer, and ſuch of them as miſcarry they graft the ſucceeding ſpring (the manner of theſe operations will be deſcribed under their proper heads.) Thoſe trees where the buds have taken, muſt be headed off in the beginning of March about ſix inches above the bud; and when the bud hath ſhot in ſummer, if you fear its being blown out by the winds, you may faſten it up with ſome baſs, or any other ſoft binding, to that part of the ſtock which was left above

the bud. The autumn following theſe trees will be fit to remove; but if your ground is not ready to receive them, they may remain two years before they are tranſplanted; in doing which, you muſt obſerve not to head them, as is by many practiſed, for this very often is immediate death to them; but if they ſurvive it, they ſeldom recover this amputation in five or ſix years.

If theſe trees are intended for a wall, I would adviſe the planting dwarfs between the ſtandards; ſo that while the dwarfs are filling the bottom of the walls, the ſtandards will cover the tops, and will produce a great deal of fruit: but theſe, as the dwarfs ariſe to fill the walls, muſt be cut away to make room for them; and when the dwarf trees cover the walls, the ſtandards ſhould be entirely taken away. But I would adviſe, never to plant ſtandard Cherries over other fruits, for there is no other ſort of fruit that will proſper well under the drip of Cherries.

When theſe trees are taken up from the nurſery, their roots muſt be ſhortened, and all the bruiſed parts cut off; and alſo all the ſmall fibres, which would dry, grow mouldy, and be a great prejudice to the new fibres in their coming forth; you muſt alſo cut off the dead part of the ſtock which was left above the bud, cloſe down to the back part of it, that the ſtock may be covered by the bud. If theſe trees are deſigned for a wall, obſerve to place the bud directly from the wall, that the back part of the ſtock that was cut may be hid from ſight. The ſoil that Cherries thrive beſt in, is a freſh hazel loam; but if the ſoil is a dry gravel, they will not live many years, and will be perpetually blighted in the ſpring.

The ſorts commonly planted againſt walls, are the Early May, and May Duke, which ſhould have a ſouth aſpected wall. The Hearts and common Duke will thrive on a weſt wall; and in order to continue this ſort later in the ſeaſon, they are frequently planted againſt north and north-weſt aſpected walls, where they ſucceed very well; and the Morello on a north wall, which laſt is chiefly planted for preſerving. The Hearts are all of them ill bearers, for which reaſon they are ſeldom planted againſt walls: but I am apt to believe, if they were grafted upon the Bird Cherry, and managed properly, that defect might be remedied; for this ſtock (as I am informed) will render Cherries very fruitful; and having the ſame effect on Cherries, as the Paradiſe ſtock hath on Apples, they may be kept in leſs compaſs, which is an experiment well worth the trial.

Your trees, if planted againſt a wall, ſhould be placed at leaſt twenty or twenty-four feet aſunder, with a ſtandard tree between each dwarf: this will be found a reaſonable diſtance, when we conſider, that Cherry-trees will extend themſelves full as far as Apricots, and many other ſorts of fruit.

In pruning theſe ſorts of fruit, you ſhould never ſhorten their ſhoots; for the moſt part of them produce their fruit buds at the extremities, which, when ſhortened, are cut off, and this often occaſions the death of the ſhoot, at leaſt a good part of its length: their branches ſhould be therefore trained in at full length horizontally, obſerving in May, where there is a vacancy in the wall, to ſtop ſome ſtrong adjoining branches, which will occaſion their putting out two or more ſhoots; by which means, at that ſeaſon of the year, you may always get a ſupply of wood for covering the wall; and at the ſame time, ſhould all foreright ſhoots be diſplaced by the hand; for if they are ſuffered to grow till winter, they will not only deprive the bearing branches of their proper ſupply of nouriſhment, but when they are cut out, it occaſions the tree to gum in that part (for Cherries bear the knife the worſt of any ſort of fruit trees;) but be careful not to rub off the ſides or ſpurs, which are produced upon the two and three years old wood; for it is upon theſe that the greateſt part of the fruit are produced, which ſides will continue fruitful for ſeveral years. And it is for want of duly obſerving this caution, that Cherry-trees are often ſeen ſo unfruitful, eſpecially the Morello, which the more it is cut the weaker it ſhoots; and, at laſt, by frequent pruning, I have known a whole wall of them deſtroyed; which, if they had been ſuffered to grow without any pruning, might probably have lived many years, and produced large quantities of fruit.

Cherry-trees are alſo planted for orchards in many parts of England, particularly in Kent, where there are large plantations of theſe trees. The uſual diſtance allowed for their ſtanding is forty feet ſquare, at which ſpace they are leſs ſubject to blight than when they are cloſer planted; and the ground may be tilled between them almoſt as well as if it were entirely clear, eſpecially while the trees are young; and often ſtirring the ground, provided you do not diſturb their roots, will greatly help the trees; but when they are grown ſo big as to over-ſhadow the ground, the drip of their leaves will ſuffer very few things to thrive under them. Theſe ſtandard trees ſhould be planted in a ſituation defended as much as poſſible from the ſtrong weſterly winds, which are very apt to break their tender branches; this occaſions their gumming, and is very prejudicial to them.

The ſorts beſt approved for an orchard, are the common Red, or Kentiſh Cherry, the Duke, and Lukeward; all which are plentiful bearers. But orchards of theſe trees are now ſcarcely worth planting, except where land is very cheap; for the uncertainty of their bearing, with the trouble in gathering the fruit, together with the ſmall price it commonly yields, hath occaſioned the deſtroying many orchards of this fruit in Kent within a few years paſt.

This fruit was brought out of Pontus, at the time of the Mithridatic victory, by Lucullus, in the year of the city 680, and were brought into Britain about 120 years afterward, which was An. Dom. 55; and were ſoon after ſpread through moſt parts of Europe, it being generally eſteemed for its earlineſs, as being one of the firſt of the tree fruit that appears to welcome in the approaching fruit ſeaſon.

This ſort of fruit hath been by many people grafted upon the Laurel, to which it is a congener; but the effect it hath in the growth of the tree, as alſo in its fruit, will not recommend it to practice, the trees being of ſhort duration, and ſeldom produce much fruit; though this practice is as old as Pliny, who ſays it gives the fruit a pleaſant bitterneſs: but there is little to be depended upon in the writings of the ancients, with reſpect to the ſeveral ſorts of trees being grafted upon each other; very few of thoſe which we find mentioned by them to have been frequently practiſed, will not ſucceed with us. Nor is it owing to the difference of climate, as ſome have ſuppoſed, who are inclinable to believe whatever they find related in thoſe books, eſpecially in the buſineſs of huſbandry and gardening; whereas many of the rules for the practical part of huſbandry, are not founded on experiments, but are mere theory; for from many repeated trials which have been made with the utmoſt care, by perſons of the beſt ſkill, it appears, that no two ſorts of trees, which are of different claſſes, will take upon each other. However, the Laurel and the Cherry being of the ſame genus, or ſo near of kin to be ranked together by moſt botaniſts, will take upon each other by grafting. But I have not yet ſeen any of the trees ſo grafted, which have lived to be of any conſiderable ſize; though I have ſeen many trees ſo grafted, which have lived a few years, but have made very poor progreſs; nor do I remember to have ſeen any fruit upon the Cherry-trees which were grafted on the Laurels, therefore cannot determine what effect this has on the flavour of the fruit.

There are ſome perſons who graft the Duke, and other ſorts of Cherries, upon the Morello Cherry, which is but a weak ſhooter, in order to check the luxuriant growth of their trees, which will ſucceed for three or four years: but they are not of long duration, nor have I ever ſeen one tree ſo grafted, which had made ſhoots above ſix or eight inches long, but they were cloſely covered with bloſſoms, ſo may produce

duce ſome fruit in a ſmall compaſs; but theſe are experiments unfit to be carried into general uſe, and only proper to ſatisfy curioſity; for is it not much better to allow the trees a greater ſhare of room againſt the walls, when one tree ſo planted and properly managed, will produce more fruit than twenty of theſe trees, or twice that number, when they are planted too cloſe, though they are grafted upon the Black Cherry or any other free ſtock.

The Early or May Cherry is the firſt ripe, ſo one or two trees of this ſort may be allowed a place in a garden, where there is room for variety. The next ripe is the May Duke, which is a larger fruit than the other, and is more valuable. After this comes the Archduke, which, if permitted to hang upon the tree till the fruit is quite ripe, is an excellent Cherry; but few perſons have patience to let them hang their full time, ſo rarely have them in perfection, for theſe ſhould not be gathered before July; and if they hang a fortnight longer they will be better. This is to be underſtood of the ſituation near London, where they ripen a fortnight earlier than in places forty miles diſtant, unleſs they have a very warm ſheltered ſituation. When this ſort is planted againſt north walls, the fruit may be continued till the middle of Auguſt; but theſe muſt be protected from the birds, otherwiſe they will deſtroy them.

The Hertfordſhire Cherry, which is a ſort of Heart Cherry, but a firmer and better flavoured fruit, will not ripen earlier than the end of July, or the beginning of Auguſt, which makes it the more valuable for its coming when the other ſorts of Cherries are gone. This is now pretty common in the nurſeries; but as it is one of the beſt kind of Cherries, it is well worthy of being propagated in the nurſeries.

The Morello Cherry, which is generally planted againſt walls to a north aſpect, and the fruit commonly uſed for preſerving; yet where they are planted to a better aſpect, and ſuffered to hang upon the trees until they are thoroughly ripe, is a very good fruit for the table; therefore ſome of the trees of this ſort ſhould have place where there is plenty of walling, upon a ſouth-weſt wall, where they will ripen perfectly by the middle or end of Auguſt, at which time they will be an acceptable fruit.

The Carnation Cherry is alſo valuable for coming late in the ſeaſon; this has a very firm fleſhy fruit, but is not the beſt bearer. This ſort will ſome ſeaſons ripen very well on eſpaliers, and by this means the fruit may be continued longer in the ſeaſon.

The large Spaniſh Cherry is nearly allied to the Duke Cherry, from which it ſeems to be only a variety accidentally obtained; this ripens ſoon after the common Duke Cherry, and very often paſſes for it.

The yellow Spaniſh Cherry is of an oval ſhape and of an amber colour; this ripens late, and is a ſweet Cherry, but not of a rich flavour; and being but a middling bearer, is not often admitted into curious gardens, unleſs where variety is chiefly conſidered.

The Corone, or Coroun Cherry, is ſomewhat like the Black Heart, but a little rounder; this is a very good bearer and an excellent fruit, ſo ſhould have a place in every good fruit-garden. This ripens the middle of July.

The Lukeward ripens ſoon after the Corone Cherry; this is a good bearer, and a very good fruit; it is of a dark colour, not ſo black as the Corone; this will do well in ſtandards.

The Black Cherry is ſeldom grafted or budded, but is generally ſown for ſtocks to graft the other kinds of Cherries upon; but where perſons are curious to have the beſt flavoured of this ſort of fruit, they ſhould be propagated by grafting from ſuch trees as produce the beſt fruit. This ſort of Cherry is frequently planted in wilderneſſes, where it will grow to a large ſize, and, at the time of its flowering, will make a variety, and the fruit will be food for the birds.

The double-flowering Cherry is alſo propagated for the beauty of the flowers, which are extremely fine, the flowers being as double and large as a Cinnamon Roſe; and theſe being produced in large bunches on every part of the tree, render it one of the moſt beautiful trees of the ſpring. Some of the flowers which are leſs double, will often produce ſome fruit, which the very double flowers will not; but this defect is ſufficiently recompenſed in the beauty of its flowers. This is propagated by budding or grafting on the Black or Wild Cherry ſtock, and the trees are very proper to intermix with the ſecond growth of flowering trees.

CERASUS RACEMOSA. See PADUS.

CERATONIA. Lin. Gen. Plant. 983. Siliqua. Tourn. Inſt. R. H. 578. tab. 344. The Carob, or St. John's Bread, in French *Carouge*.

The CHARACTERS are,

It is male and female in diſtinct trees. The male flowers have large empalements, divided into five parts; they have no petals, but have five long ſtamina, terminated by large ſummits. The female flowers have empalements of one leaf, divided by five tubercles; they have no petals, but a fleſhy germen ſituated within the receptacle, ſupporting a ſlender ſtyle, crowned by a ſtigma in form of a head. The germen afterward becomes a long, fleſhy, compreſſed pod, divided by tranſverſe partitions, each having one large, roundiſh, compreſſed ſeed.

This genus of plants is ranged in the third ſection of Linnæus's twenty-third claſs, intitled Polygamia Triœcia. The plants of this claſs have male, female, and hermaphrodite flowers on diſtinct plants.

We have but one SPECIES of this genus, viz.

CERATONIA (*Siliqua.*) H. L. The Carob-tree, or St. John's Bread. Siliqua edulis of Caſpar Bauhin, and the Caroba of Dale.

This tree is very common in Spain, and in ſome parts of Italy, as alſo in the Levant, where it grows in the hedges, and produces a great quantity of long, flat, brown-coloured pods, which are thick, meally, and of a ſweetiſh taſte. Theſe pods are many times eaten by the poorer ſort of inhabitants when they have a ſcarcity of other food, but they are apt to looſen the belly, and cauſe gripings of the bowels. The pods are directed by the College of Phyſicians to enter ſome medicinal preparations, for which purpoſe they are often brought from abroad.

In England the tree is preſerved by ſuch as delight in exotic plants, as a curioſity; the leaves always continue green, and being different in ſhape from moſt other plants, afford an agreeable variety when intermixed with Oranges, Myrtles, &c. in the green-houſe.

Theſe plants are propagated from ſeeds, which, when brought over freſh in the pods, will grow very well, if they are ſown in the ſpring upon a moderate hot-bed; and when the plants are come up they ſhould be carefully tranſplanted each into a ſeparate ſmall pot filled with light rich earth, and plunged into another moderate hot-bed, obſerving to water and ſhade them until they have taken root; after which you muſt let them have air, in proportion to the heat of the weather. In June you muſt inure them to the open air by degrees; and in July they ſhould be removed out of the hot-bed, and placed in a warm ſituation, where they may remain until the beginning of October, when they ſhould be removed into the green-houſe, placing them where they may have free air in mild weather; for they are pretty hardy, and require only to be ſheltered from hard froſts. When the plants have remained in the pots three or four years, and have gotten ſtrength, ſome of them may be turned out of the pots in the ſpring, and planted into the full ground, in a warm ſituation, near a ſouth wall, where they will endure the cold of our ordinary winters very well, but muſt have ſome ſhelter in very hard weather.

I have not as yet ſeen any of theſe trees produce flowers, though from ſome which have been planted ſome time againſt walls, it is probable there may be flowers and fruit in a few years; though it cannot be expected that the fruit will ever ripen in this country.

CERBERA. Lin. Gen. Plant. 260. Thevetia. Lin. Hort. Cliff. 76. Prod. Leyd. 413. Ahouai. Tourn. Inſt. R. H. 657. tab. 434.

The CHARACTERS are,

The empalement is compoſed of five ſharp-pointed leaves, which ſpread open and fall away. The flower is of one leaf, funnel-ſhaped, having a long tube ſpread open at the top, where it is divided into five large obtuſe ſegments, ſtanding oblique to the mouth of the tube; it hath five ſtamina ſituated in the middle of the tube, which are terminated by erect ſummits; theſe ſtand cloſe together. In the center is ſituated a roundiſh germen, ſupporting a ſhort ſtyle, crowned by a ſtigma in form of a head. The germen afterward becomes a large, fleſhy, roundiſh berry, with a longitudinal furrow on the ſide, dividing it into two cells, each containing a ſingle, large, compreſſed nut.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CERBERA (*Ahouai*) foliis ovatis. Lin. Sp. Plant. 208. *Cerbera with oval leaves.* Ahouai. Thevet. Antarct. 66. Tourn. Inſt. 658. *The Ahouai.*
2. CERBERA (*Thevetia*) foliis linearibus, longiſſimis, confertis. Lin. Sp. Plant. 209. *Cerbera with very long narrow leaves growing in cluſters.* Ahouai Nerii folio, flore luteo. Plum. Cat. 20. *Ahouai with a Roſe-bay leaf, and a yellow flower.*
3. CERBERA (*Manghas*) foliis lanceolatis, nervis tranſverſalibus. Flor. Zeyl. 106. *Cerbera with ſpear-ſhaped leaves and tranſverſe nerves.* Manghas lacteſcens, foliis Nerii craſſis venoſis, Jaſmini flore, fructu Perſici ſimili venenato. Burm. Zeyl. 150. tab. 70.

The firſt ſort grows naturally in the Brazils, and alſo in the Spaniſh Weſt Indies in plenty; and there are ſome of the trees growing in the Britiſh iſlands of America; this riſes with an irregular ſtem to the height of eight or ten feet, ſending out many crooked diffuſed branches, which toward their tops are garniſhed with thick ſucculent leaves about three inches long, and near two broad, of a lucid green, ſmooth, and very full of a milky juice, as is every part of the ſhrubs. The flowers come out in looſe bunches at the end of the branches, of a cream colour, having long narrow tubes at the top cut into five obtuſe ſegments, which ſeem twiſted, ſo as to ſtand oblique to the tube; theſe ſpread open, and have the appearance of the flowers of Oleander. It flowers in July and Auguſt, but never produces fruit in England. The wood of this tree ſtinks moſt abominably, and the kernels of the nuts are a moſt deadly poiſon; ſo that the Indians always caution their children againſt eating them, for they know of no antidote to expel this poiſon; nor will any of them uſe the wood of this tree for fuel, but they take the kernels out of the ſhells, into which they put ſmall ſtones, then bore a hole through each ſhell, and ſtring them; theſe they tie about their legs to dance with, as the morris-dancers uſe bells.

The ſecond ſort grows naturally in the Spaniſh Weſt Indies, and alſo in ſome of the French iſlands in America, and hath lately been introduced into the Britiſh iſlands, from whence I received the ſeeds by the title of French Phyſic Nut; but how it came by that appellation, I cannot imagine, becauſe there is another plant which grows common there, and has paſſed under that title many years.

This riſes with a round ſtalk about the ſame height as the former, dividing upward into many branches. Theſe, when young, are covered with a green ſmooth bark, but as they grow older, the bark becomes rough, but changes to a gray or Aſh-colour. The leaves are four or five inches long, and half an inch broad in the middle, ending in ſharp points, of a lucid green, and come out in cluſters without order, and are full of a milky juice, which flows out when they are broken. The flowers come out from the ſide of the branches upon long foot-ſtalks, each ſupporting two or three yellow flowers with long tubes, ſpreading open in the ſame manner as the former. It flowers about the ſame time as the former, but never produces fruit in England.

The third ſort grows naturally in India, and alſo in ſome parts of the Spaniſh Weſt Indies, from whence I received the ſeeds; this riſes with a woody ſtem to the height of twenty feet, ſending out many branches toward the top, garniſhed with long ſpear-ſhaped leaves, which are rounded at their ends; they are thick, ſucculent, and, on their upper ſide, of a lucid green, having ſeveral tranſverſe nerves from the midrib to the ſide; on their under ſide they are of a paler green. The flowers are produced at the end of the branches, ſtanding on long foot-ſtalks, each ſuſtaining two or three flowers ſhaped like thoſe of the other ſpecies.

Theſe plants may be propagated from their nuts, which muſt be procured from the countries where they grow naturally; theſe ſhould be put into ſmall pots filled with light earth, and plunged into a hot-bed of tanners bark in the ſpring, and treated in the ſame manner as other tender exotic ſeeds, giving them now and then a little water to promote their vegetation. When the plants are come up about two inches high, they ſhould be tranſplanted each into a ſeparate pot, filled with light ſandy earth, and plunged again into a hot-bed of tanners bark, obſerving to ſhade the glaſſes in the heat of the day, until the plants have taken new root; they muſt alſo be frequently refreſhed with water, but it muſt not be given in too large quantities. As the ſummer advances, theſe plants ſhould have air admitted to them in proportion to the warmth of the ſeaſon; and when they have filled theſe ſmall pots with their roots, they ſhould be turned out and tranſplanted into other pots of a larger ſize, but they muſt not be too large; for the roots of theſe plants ſhould be confined, nor ſhould the earth in which they are planted be rich, but a light ſandy ſoil is beſt for them; after they are new potted they ſhould be plunged into the hot-bed again, obſerving to water them now and then, as alſo to admit air under the glaſſes every day in proportion to the warmth of the ſeaſon. When the plants are grown about a foot high, they ſhould have a larger ſhare of air, in order to harden them before the winter, but they ſhould not be wholly expoſed to the open air. In the winter theſe plants ſhould be placed in a warm ſtove, and during that ſeaſon they ſhould have very little water given to them, eſpecially in cold weather, leſt it ſhould rot their roots. In the following ſpring theſe plants ſhould be ſhifted again into other pots, at which time you ſhould take away as much as you conveniently can of the old earth from their roots, and afterwards cut off the decayed fibres; then put them into pots filled with the ſame light ſandy earth, and plunge them into the bark-bed again, for theſe plants will not thrive well unleſs they are conſtantly kept in tan: and as they abound with milky juice, they ſhould be ſparingly watered, for they are impatient of moiſture, eſpecially during the winter ſeaſon.

When by any accident the tops of theſe plants are injured, they frequently put out ſhoots from their roots, which, if carefully taken up and potted, will make good plants, ſo that they may be this way propagated.

CERCIS. Lin. Gen. Plant. 458. Siliquaſtrum. Tourn. Inſt. R. H. 646. tab. 414. The Judas-tree, in French *Guainier.*

The CHARACTERS are,

It hath a ſhort bell-ſhaped empalement of one leaf, which is convex at the bottom, and full of honey liquor; at the top it is indented in five parts. The flower hath five petals, which are inſerted in the empalement, and greatly reſembles a papilionaceous flower. The two wings riſe above the ſtandard, and are reflexed; the ſtandard is of one roundiſh petal, and the keel is compoſed of two petals, in form of a heart, which incloſe the parts of generation. It hath ten diſtinct ſtamina, which decline, four of which are longer than the reſt, and are terminated by oblong incumbent ſummits. It hath a long ſlender germen,

men, ſitting upon a ſlender ſtyle, crowned by an obtuſe ſtigma; the germen afterward becomes an oblong pod with an oblique point, having one cell, incloſing ſeveral roundiſh compreſſed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flower having ten ſtamina and one ſtyle. This genus is by all the writers placed with the papilionaceous flowers, before Linnæus's Syſtem, which ſeparates it from them, becauſe the ſtamina in theſe flowers are all diſtinct; whereas the papilionaceous flowers have nine ſtamina joined together, and one ſeparate.

The Species are,

1. Cercis (*Siliquaſtrum*) foliis cordato-orbiculatis glabris. Hort. Cliff. 156. *Cercis with round, heart-ſhaped, ſmooth leaves.* Siliquaſtrum. Caſt. Duran. 415. and the Arbor Judæ. Dod. Pemp. 786. *The common Judas-tree.*
2. Cercis (*Canadenſis*) foliis cordatis pubeſcentibus. Hort. Cliff. 156. *Cercis with downy heart-ſhaped leaves.* Siliquaſtrum Canadenſe. Tourn. Inſt. R. H. 647. *Canada Arbor Judæ, or Red Bud-tree.*

The firſt ſort grows naturally in the ſouth of France, Spain, and Italy, and is by the Spaniards and Portugueſe, titled the Tree of Love: this riſes with an upright trunk to the height of twenty feet, covered with a dark brown bark, dividing upward into many irregular branches, garniſhed with round, heart-ſhaped, ſmooth leaves, placed irregularly on the branches, having long foot-ſtalks; they are of a pale green on their upper, and of a grayiſh colour on their under ſide, and fall off in autumn. The flowers come out on every ſide the branches, and many times from the ſtem of the tree in large cluſters, ariſing from the ſame point, having ſhort foot-ſtalks; they are of a very bright purple colour, ſo make a fine appearance, eſpecially when the branches are covered pretty thick with them: for they come out in the ſpring with the leaves, ſo are in full beauty before the leaves have obtained to half their ſize. The ſhape of the flower is the ſame as other papilionaceous (or butterfly) flowers; theſe have an agreeable poignancy, ſo are frequently eaten in ſallads. When the flowers fall off, the germen becomes a long flat pod with one cell, containing one row of roundiſh ſeeds, a little compreſſed; but theſe do not often ſucceed the flowers in this country upon ſtandard trees, for the birds pick off the flowers when fully open; but where they have been planted againſt good aſpected walls, I have ſeen great plenty of the pods, which, in warm ſeaſons, have ripened very well.

Theſe trees are uſually planted with other flowering trees and ſhrubs for ornaments to pleaſure-gardens, and for their ſingular beauty, deſerve a place as well as moſt other ſorts; for when they are arrived to a good ſize, they are productive of flowers, ſo as that the branches are often cloſely covered with them; and the ſingular ſhape of their leaves make a very pretty variety in the ſummer, and are ſeldom damaged by inſects, ſo that they are often entire, when many other trees have their leaves almoſt eaten up. This tree flowers in May, when planted in the full air, but againſt warm walls it is a fortnight or three weeks earlier.

The wood of this tree is very beautifully veined with black and green, and takes a fine poliſh, ſo may be converted to many uſes.

There are two other varieties of this tree, one with a white, and the other hath a fleſh-coloured flower, but theſe have not half the beauty of the firſt. Tournefort alſo mentions one with broader pods and pointed leaves, which I believe is only a variety of this.

The ſecond ſort grows naturally in moſt parts of North America, where it is called Red Bud, I ſuppoſe from the red flower-buds appearing in the ſpring before the leaves come out; this grows to a middling ſtature in the places where it is a native, but in England rarely riſes with a ſtem more than twelve feet high, but branches out near the root. The branches of this are weaker than thoſe of the firſt ſort; the leaves are downy, and terminate in points; whereas thoſe of the firſt are ſmooth, and round at the end where they are indented. The flowers of this are alſo ſmaller, ſo do not make ſo fine appearance as thoſe of the firſt; but the trees are equally hardy, and will thrive in the open air very well.

The flowers of this ſort are frequently put into ſallads by the inhabitants of America; and the French in Canada pickle the flowers, but theſe have little flavour. The wood of this tree is of the ſame colour and texture as that of the firſt.

Theſe plants may be propagated by ſowing their ſeeds upon a bed of light earth, towards the latter end of March, or the beginning of April (and if you put a little hot dung under the bed, it will greatly facilitate the growth of the ſeeds;) when the ſeeds are ſown, ſift the earth over them about half an inch thick; and, if the ſeaſon prove wet, it will be proper to cover the bed with mats, to preſerve it from great rains, which will ſometimes burſt the ſeeds, and cauſe them to rot; the ſeeds will often remain till the ſpring following before they come up, ſo the ground muſt not be diſturbed till you are convinced that the plants are all come up; for ſome few may riſe the firſt year, and a greater number the ſecond.

When the plants are come up they ſhould be carefully cleared from weeds, and in very dry weather muſt be now and then refreſhed with water, which will greatly promote their growth. The winter following, if the weather is very cold, it will be proper to ſhelter the plants, by covering them either with mats or dry ſtraw in hard froſts, but they ſhould conſtantly be opened in mild weather, otherwiſe they will grow mouldy and decay.

About the beginning of April, you ſhould prepare a ſpot of good freſh ground, to tranſplant theſe out (for the beſt ſeaſon to remove them is juſt before they begin to ſhoot;) then you ſhould carefully take up the plants, being careful not to break their roots, and plant them as ſoon as poſſible, becauſe if their roots are dried by the air, it will greatly prejudice them.

The diſtance theſe ſhould be planted, muſt be proportionable to the time they are to remain before they are again tranſplanted; but commonly they are planted two feet row from row, and a foot aſunder in the rows, which is full room enough for them to grow two or three years, by which time they ſhould be tranſplanted where they are deſigned to remain; for if they are too old when removed, they ſeldom ſucceed ſo well as younger plants.

The ground between the plants ſhould be carefully kept clean from weeds in ſummer, and in the ſpring ſhould be well dug to looſen the earth, that their roots may extend themſelves every way; at that ſeaſon prune off all ſtrong ſide branches (eſpecially if you intend to train them up for ſtandard trees,) that their top branches may not be checked by their ſide ſhoots, which often attract the greateſt part of the nouriſhment from the roots; and if their ſtems are crooked, you muſt place a ſtrong ſtake down by the ſide of each plant, and faſten the ſtem to it in ſeveral places, ſo as to bring it ſtrait, which direction it will ſoon take as it grows larger, and thereby the plants will be rendered beautiful.

When they have remained in this nurſery two or three years, they ſhould be tranſplanted in the ſpring where they are deſigned to remain, which may be in wilderneſs quarters among other flowering trees, obſerving to place them with trees of the ſame growth, ſo as they may not be overhung, which is a great prejudice to moſt plants.

CEREFOLIUM. See Chærefolium.

CEREUS. Par. Bat. 122. Boerh. Ind. alt. 1. 292. Juſſ. Act. R. Par. 1716. Cactus. Lin. Gen. Plant. 539. The Torch Thiſtle.

The Characters are,

It hath an oblong ſcaly empalement, which is covered with ſpines, and ſits upon the germen. The flower is compoſed

of a great number of narrow pointed petals, which ſpread open like the ſun's rays. It hath a great number of declining ſtamina, which are inſerted to the baſe of the petals, and are terminated by oblong ſummits. The germen, which is ſituated under the empalement, ſupports a long cylindrical ſtyle, crowned with a multifid ſtigma, in form of a head. The germen afterward becomes an oblong ſucculent fruit, with a prickly ſkin, full of ſmall ſeeds incloſed in the pulp.

Dr. Linnæus has joined the plants of this genus, and alſo thoſe of Opuntia to the Cactus, making them only ſpecies of the ſame genus; but as the flowers of theſe plants differ greatly in their form from thoſe of the Cactus, they ſhould be ſeparated; and by preſerving the title to this genus, by which it has been long known, it will prevent confuſion; and by increaſing the number of genera, the ſpecific differences may be better aſcertained. Linnæus places the genus of Cactus in his twelfth claſs, intitled Icoſandria, in which he includes thoſe plants, whoſe flowers have from nineteen to thirty ſtamina, which are faſtened to the petals.

The Species are,

1. Cereus (*Hexagonus*) erectis, ſexangularis, longus, angulis diſtantibus. *Upright long Cereus with ſix angles, which are far diſtant.* Cereus erectus altiſſimis Surinamenſis. Par. Bat. 116. *Talleſt upright Torch Thiſtle of Surinam.*
2. Cereus (*Tetragonus*) erectis quadrangularis, angulis compreſſis. *Upright Cereus with four compreſſed angles.* Cereus erectus quadrangularis, coſtis alarum inſtar aſſurgentibus. Boerh. Ind. alt. 293. *Four-cornered upright Torch Thiſtle.*
3. Cereus (*Lanuginoſus*) erectus octangularis, angulis obtuſis, ſuperne inermibus. *Upright Cereus with eight obtuſe angles, having no ſpines on the upper part.* Cereus erectus, fructu rubro non ſpinoſo. Par. Bat. 114. *Upright Torch Thiſtle with a red fruit, having no ſpines.*
4. Cereus (*Peruvianus*) erectus octangularis, angulis obtuſis, ſpinis robuſtioribus patulis. *Upright Cereus with eight angles which are obtuſe, and ſtrong ſpreading ſpines.* Cereus erectus maximus fructu ſpinoſo rubro. Dadus. Par. Bat. 113. *Greateſt upright Torch Thiſtle with a red prickly fruit.*
5. Cereus (*Repandus*) erectus novemangularis, obſoletis angulis, ſpinis lanâ brevioribus. *Upright Cereus with nine angles, and ſpines ſhorter than the down.* Cereus Curaſſavicus, erectus, maximus, fructu rubro non ſpinoſo, lanugine flaveſcente. Par. Bat. 115. *Greateſt upright Torch Thiſtle with a red fruit, having no ſpines, and a yellowiſh down.*
6. Cereus (*Heptagonus*) erectus octangularis, ſpinis lanâ longioribus. *Upright Cereus with ſeven or eight angles, and ſpines longer than the down.* Cereus erectus craſſiſſimus maximè anguloſus, ſpinis albis pluribus longiſſimis, lanugine flavâ. Boerh. Ind. alt. 293. *Upright thickeſt Torch Thiſtle, having many angles, ſeveral very long white ſpines, and a yellow down.*
7. Cereus (*Royeni*) erectus novemangularis, ſpinis lanâ æqualibus. *Upright Torch Thiſtle with nine angles, and ſpines of equal length with the down.* Cereus erectus, gracilis, ſpinoſiſſimis, ſpinis flavis, polygonus, lanugine albâ palleſcente. Boerh. Ind. alt. 293. *Upright ſlender Torch Thiſtle, very full of yellowiſh ſpines, many angles, and a pale white down.*
8. Cereus (*Gracilis*) erectus gracilior novemangularis ſpinis brevibus, angulis obtuſis. *Slenderer upright Torch Thiſtle having nine obtuſe angles, and ſhort ſpines.* Cereus altiſſimis, gracilior, fructu extus luteo intus niveo, ſeminibus nigris pleno. *Talleſt ſlender Torch Thiſtle with a fruit yellow without, white within, and full of black ſeeds.*
9. Cereus (*Triangularis*) repens triangularis, fructu maximo rotundo, rubro, eſculento. *Creeping triangular Torch Thiſtle, with very large, round, red, eatable fruit.* Cereus ſcandens minor trigonus articulatis fructu ſuaviſſimo. Par. Bat. Prod. 118. *Leſſer, creeping, three-cornered, jointed Torch Thiſtle, with a very ſweet fruit, commonly called in the Weſt Indies, the true prickly Pear, and by the Spaniards Pithatiaya.*
10. Cereus (*Compreſſis*) repens triangularis, angulis compreſſis. *Creeping triangular Torch Thiſtle, with compreſſed angles.* Ficoides Americanum, ſ. Cereus erectus, criſtatus, foliis triangularibus profundè canaliculatis. Pluk. Phyt. tab. 29. f. 3. *Creſted American Torch Thiſtle, with three angles deeply channelled.*
11. Cereus (*Grandiflorus*) repens ſubquinquangularibus. *Creeping Torch Thiſtle with five angles.* Cereus ſcandens minor polygonus articulatis. Par. Bat. 120. *Leſſer jointed climbing Torch Thiſtle with many angles.*
12. Cereus (*Flagelliformis*) repens decemangularis. *Creeping Cereus with ten angles.* Cereus minor ſcandens, polygonus, ſpinoſiſſimis, flore purpureo. Ed. Prior. *Leſſer climbing Torch Thiſtle, with many ſpinous angles and a purple flower.*

The firſt ſort has been the moſt common in the Engliſh gardens. This grows naturally in Surinam, from whence it was brought to the gardens in Holland, where it produced flowers in the year 1681, and from the Dutch gardens, moſt parts of Europe have been ſupplied with this plant.

This riſes with an upright ſtalk, having ſix large angles, which are far aſunder, armed with ſharp ſpines, which come out in cluſters at certain diſtances, ariſing from a point, but ſpread open every way like a ſtar; the outer ſubſtance of the plant is ſoft, herbaceous, and full of juice, but in the center there is a ſtrong fibrous circle running the whole length, which ſecures the ſtem from being broke by winds. Theſe will riſe to the height of thirty or forty feet, provided their tops are not injured, if they have room to grow; but ſome of them have grown too tall to be kept in the ſtoves, ſo have either been cut off, or the plants laid down at length in winter; but whenever the ſtems are cut, or otherwiſe injured, they put out one, two, or ſometimes three ſhoots, from the angles, immediately under the wounded part, and frequently one or two lower down. Theſe ſhoots, if they are not cut off, form ſo many diſtinct ſtems, and grow upright; but theſe ſeldom are ſo large as the principal ſtem, eſpecially if more than one is left on the ſame plant. The flowers come out from the angles on the ſide of the ſtem; theſe have a thick, fleſhy, ſcaly foot-ſtalk, round, channelled, and hairy, ſupporting a ſwelling germen, upon the top of which ſits the ſcaly prickly empalement, cloſely ſurrounding the petals of the flowers, till a little time before they expand, which in moſt of the ſorts is in the evening, and their duration is very ſhort, for before the next morning they wither and decay. The flower of this ſort is compoſed of many concave petals, which, when fully expanded, are as large as thoſe of the Hollyhock; the inner petals are white, and crenated at their extremity. The empalement is green, with ſome purple ſtripes; the middle of the flower is occupied by a great number of ſtamina, which decline, and riſe at their extremities, having roundiſh ſummits. The flowers of this kind are never ſucceeded by fruit in this country, nor do the plants often produce their flowers here; but when they do, there are generally ſeveral on the ſame plant. I have ſome years had more than a dozen upon a ſingle plant, which have all flowered within a few days of each other. The uſual time of its flowering is in July.

This ſort is not ſo tender as the others, ſo may be preſerved in a warm green-houſe, without any artificial heat; but the plants ſhould have no water given them in winter, when they are thus ſituated; for unleſs they are placed in a ſtove, where the moiſture is ſoon evaporated, the wet will occaſion them to rot.

Theſe plants naturally grow upon very dry rocky places, where their roots are confined, ſo they muſt not be planted in large pots, nor ſhould they be planted in rich ſoil; the beſt compoſt for them is one third light earth from a common, a third of ſea ſand, and the other part ſifted lime-rubbiſh; if theſe are well mixed together, and often turned over before the plants are put into it, they will thrive the better. The farther directions for their management, will be hereafter exhibited.

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The ſecond ſort riſes with an upright ſtem like the firſt, but it hath only four angles, which are compreſſed, and ſtand far aſunder. This is very ſubject to put out many ſhoots from the ſides, which ſtops its upright growth, ſo that the plants rarely riſe more than four or five feet high. This hath not flowerd in England, ſo far as I have been able to learn. The third, fourth, fifth, ſixth, ſeventh and eighth ſorts grow naturally in the Britiſh iſlands of America, from whence I received them in the year 1728. Theſe have the ſame form as the firſt, but differ in the ſize of their ſtems, the number of angles, and the length of their ſpines, as is before expreſſed in their titles; but, except the eighth ſort, not any of them have flowered in England as yet, though there are many of the plants which are more than twelve or fourteen feet high: the eighth ſort hath the ſmalleſt ſtem of any of the upright ſorts which I have yet ſeen; this hath generally nine obtuſe angles, which are armed with ſhort ſpines, placed at farther diſtances than thoſe of the other ſorts, nor are the channels between the angles near ſo deep. The flowers of this are produced from the angels, in the ſame manner as the firſt, but they are ſmaller, and the empalement is of a light green, without any mixture of colour. The fruit is about the ſize and ſhape of a middling Bergamot Pear, having many ſoft ſpines on the ſkin; the outſide is a pale yellow, the inſide very white, full of pulp, having a great number of ſmall black ſeeds lodged in it. This ſort frequently flowers in July, and in warm ſeaſons will perfect its fruit, which hath very little flavour in this country.

Theſe ſorts are more impatient of cold than the firſt, ſo require a ſtove to preſerve them in winter; nor ſhould they be expoſed abroad in ſummer, but kept conſtantly in the houſe, giving them a large ſhare of air in warm weather.

The twelfth ſort grows naturally in Peru, from whence it was ſent to the royal garden at Paris; and in the year 1734, I was favoured with ſome cuttings of it by Dr. Bernard de Juſſieu, demonſtrator of the plants in that garden. Theſe ſucceeded in the Chelſea garden, and have ſince been communicated to moſt of the curious gardens in England. This is not ſo tender as the other ſorts, ſo may be preſerved in a good green-houſe, or placed under a hot-bed frame in winter, and in ſummer ſhould be expoſed to the open air, which will prevent the ſhoots from drawing weak, and thereby a greater number of flowers will be produced; but during the time they remain in the open air, they ſhould have little water; and if the ſeaſon ſhould prove wet, the plants ſhould be ſcreened from it, otherwiſe it will cauſe them to rot the following winter. This ſort produces its flowers in May, and ſometimes earlier, when the ſeaſon is warm.

The ninth ſort is, by the inhabitants of Barbadoes, trained up againſt their houſes for the ſake of its fruit, which is about the bigneſs of a Bergamot Pear, and of a moſt delicious flavour. This, and alſo the tenth, eleventh, and twelfth ſorts, are tender, ſo require a warm ſtove to preſerve them. Theſe ſhould be placed againſt the walls of the ſtove, into which they will inſinuate their roots, and extend themſelves to a great length; and with a little help, in faſtening them to the wall in a few places, may be led up about the cieling of the houſe, where they will appear very handſome. And the eleventh ſort, when arrived to a ſufficient ſtrength, will produce many exceeding large, beautiful, ſweet-ſcented flowers; but they are (like moſt of the flowers of theſe kinds) of very ſhort duration, ſcarcely continuing full blown ſix hours; nor do the ſame flowers ever open again, when once cloſed: they begin to open in the evening between ſeven and eight of the clock, are fully blown by eleven, and by three or four the next morning fade, and hang down quite decayed; but, during their continuance, there is ſcarce any flower of greater beauty, or that makes a more magnificent appearance; for the calyx of the flower, when open, is near a foot diameter; the inſide of which, being of a ſplendid yellow colour, appears like the rays of a bright ſtar, the outſide of a dark brown; and the petals of the flowers being of a pure white, adds to the luſtre; and the vaſt number of recurved ſtamina, ſurrounding the ſtyle in the center of the flower, make a fine appearance; and add to this the fine ſcent of the flower, which perfumes the air to a conſiderable diſtance: there is ſcarce any plant which deſerves a place in the hot-houſe ſo much as this, eſpecially as it is to be trained againſt the wall, where it will not take up room. The uſual ſeaſon of its flowering is in July, and when the plants are large, they will produce a great number of flowers, ſo that there will be a ſucceſſion of them for ſeveral nights, and many of them will open the ſame night. I have frequently had ſix, eight, or ten flowers open at the ſame time upon one plant, which have made a moſt magnificent appearance by candle-light, but none of them have been ſucceeded by any appearance of fruit.

The tenth ſort produces a flower little inferior to the former, as I have been informed by perſons who have ſeen them; but I never had the good fortune to have any of theſe plants which have been under my care flower; nor have I heard of more than two gardens where they have as yet flowered in England; the firſt of them was many years ſince in the royal gardens at Hampton Court, when there was a curious collection of exotic plants kept in good order in thoſe gardens, which have ſince been greatly neglected; the other was produced in the gardens of the right honourable the Marquis of Rockingham, at Wentworth-Hall, in Yorkſhire. Theſe are the only gardens in this country where I have heard of this ſort having produced flowers; although there are many of theſe plants in ſeveral gardens, which are of a conſiderable age, and extend their branches to a very great diſtance.

The ninth ſort has never produced any flowers as yet in England, nor have we any good figure of the flower in any of the botanic books; but I have been informed by ſome curious perſons who have reſided in America, that the flowers are not near ſo beautiful as thoſe of the tenth and eleventh, but the fruit is greatly eſteemed by all the inhabitants.

The twelfth ſort produces a greater number of flowers than either of the other; theſe are of a fine Pink colour, both within and without; the petals are not ſo numerous, and the tube of the flower is longer than thoſe of the other ſpecies; and, contrary to all the other ſorts, keep open three or four days, provided the weather is not too hot, or the place where they ſtand kept too warm. During the continuance of theſe flowers, they make a fine appearance. This ſort has very ſlender trailing branches, which require to be ſupported; but theſe do not extend ſo far as thoſe of the other ſort, nor are their branches jointed as thoſe are, ſo they cannot be trained ſo far againſt the walls of the houſe; but as it produces ſuch beautiful flowers, and in ſo great plenty, it may be placed among the firſt claſs of exotic plants. This plant has produced fruit in the garden at Chelſea, but it hath not as yet ripened.

Theſe plants are all propagated by cuttings, ſo that if you intend to increaſe the number of them, you muſt cut off the ſtems of the upright ſorts at what length you pleaſe; theſe ſhould be laid in a dry place to heal the part cut, at leaſt a fortnight or three weeks before they are planted; but if they lie a month it is much the better, and they will be in leſs danger of rotting, eſpecially thoſe ſorts which are the moſt ſucculent.

Theſe cuttings ſhould be planted in pots filled with the mixture of earth before directed, laying ſome ſtones in the bottom of the pots to drain off the moiſture; then place the pots into a gentle hot-bed of tanners bark, to facilitate their rooting, giving them once a week a gentle watering.

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The beſt ſeaſon for this work is in June, or the beginning of July, that they may have time to root before winter; towards the middle of Auguſt you muſt begin to give them air by degrees, to harden them againſt winter, but they ſhould not be wholly expoſed to the open air or ſun; at the end of September they muſt be removed into the ſtove, or green-houſe, where they are to abide the winter, during which ſeaſon you muſt be very careful not to let them have much water; and always obſerve to place the young plants, for the firſt winter, in a little warmer ſituation than the older plants, as being ſomewhat tenderer.

Theſe plants ſhould always have a dry ſituation in winter, for as they imbibe the greateſt part of their nouriſhment from the circumambient air, ſo if this be too replete with moiſt particles, it will occaſion their rotting; therefore they ſhould not be expoſed abroad, not even in the midſt of ſummer, unleſs they are under ſhelter; for great rains, which often happen at that ſeaſon, are very injurious to them; the firſt eight ſorts ſhould be therefore placed ſo as to enjoy a free air in the ſummer, but, at the ſame time, ſcreened from rains and great dews; it will therefore be much the better method to ſet them in an open glaſs ſtove, where the windows may be ſet open in good weather, and ſhut in cold or wet. The other four ſorts muſt not be expoſed too much to the open air, even in the hotteſt ſeaſon, eſpecially if you deſign to have them flower; and in winter they ſhould be kept very warm, and have no water given them.

When you have once cut off the tops of any of theſe plants, in order to increaſe them, the lower parts will put forth freſh ſhoots from their angles, which, when grown to be eight or nine inches long, may alſo be taken off to make freſh plants; and, by this means, the old plants will continually afford a ſupply, ſo that you never need cut off above one plant of a ſort, which you ſhould preſerve for a breeder.

Theſe plants being ſucculent, they will bear to be a long time out of the ground; therefore whoever hath a mind to get any of them from the Weſt Indies, need give no other inſtructions to their friends, but to cut them off, and let them lie two or three days to dry; then put them up in a box with dry hay, or ſtraw, to keep them from wounding each other with their ſpines, and if they are two or three months on their paſſage, they will keep very well, provided no wet get to them.

CERINTHE. Lin. Gen. Plant. 171. Tourn. Inſt. R. H. 79. tab. 16. Honeywort; in French, *Melinet*.

The CHARACTERS are,

It hath an oblong permanent empalement, cut into five equal parts. The flower hath one petal, having a thick ſhort tube, which ſwells upward much thicker, and at the brim is quinquefid; the chaps are naked and pervious; it hath five ſhort ſtamina, terminated by pointed upright ſummits. In the bottom are ſituated four germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by an obtuſe ſtigma; two of the germen afterward becomes ſo many ſeeds, which are hard, ſmooth, plain on one ſide, but convex on the other, and are incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CERINTHE (*Major*) foliis ovato-oblongis, aſperis, amplexicaulibus, corollis obtuſiuſculis, patulis. *Honeywort with oval, oblong, rough leaves, embracing the ſtalk, and ſpreading blunt petals.* Cerinthe quorundam major, ſpinoſo folio, flavo flore. J. B. 3. 602. *Greater Honeywort with a prickly leaf, and a yellow flower.*
2. CERINTHE (*Glabris*) foliis oblongo-ovatis, glabris, amplexicaulibus, corollis obtuſiuſculis, patulis. *Honeywort with oblong, oval, ſmooth leaves, embracing the ſtalks, and a ſpreading blunt petal.* Cerinthe flore rubro purpuraſcente. C. B. P. 258. *Honeywort with a purpliſh red flower.*
3. CERINTHE (*Minor*) foliis amplexicaulibus, integris, fructibus geminis, corollis acutis, clauſis. Lin. Sp. Plant. 137. *Honeywort with entire leaves, embracing the ſtalk, a double fruit, and a pointed cloſed petal.* Cerinthe minor. C. B. P. 258. *Smaller Honeywort.*

The firſt ſort grows naturally in Germany and Italy. This is an annual plant, which riſes with ſmooth branching ſtalks a foot and a half high, garniſhed with oval, oblong, prickly leaves, which are of a ſea-green, ſpotted with white, and embrace the ſtalks with their baſe; the flowers are produced at the end of the branches, ſtanding between the ſmall leaves, which embrace the ſtalks; theſe are long, tubulous, and blunt at the top, where the tube is greatly enlarged; they are yellow, and have a mellous liquor in their tubes, with which the bees are much delighted; and an herbaceous empalement, cut into five parts, which afterward incloſes the ſeeds; theſe flowers have each four embryos, or germen, but only two of them are fruitful The top of the ſtalks are reflexed backward, ſomewhat like thoſe of Turnſole. It flowers in June and July, and the ſeeds ripen in Auguſt and September. If the ſeeds are not taken as ſoon as they change black, they drop out of the empalement in a ſhort time; ſo unleſs they are carefully gathered up, they will vegetate with the firſt moiſt weather.

The ſecond ſort is like the firſt, but the leaves are larger, and ſmooth, having no prickles on them. The flowers of this are of a purpliſh red colour, and the plants grow larger. This grows in Italy, and the ſouth of France; it is alſo an annual plant.

The third ſort grows naturally on the Alps, and other mountainous places; this hath ſlenderer ſtalks than either of the former, which riſe two feet high, and cloſer garniſhed with leaves than either of the others; theſe embrace the ſtalks with their baſe, and are of a bluer green colour. The flowers are ſmall, their upper part is deeply cut into five ſegments, but the mouth of the tube is cloſely ſhut up; the empalement is large, and cloſely ſurrounds the flower. The flowers are yellow, and appear at the ſame time with the other ſorts. If the ſeeds of this are permitted to ſcatter, the plants will come up in autumn, and theſe will grow much taller, and flower earlier than thoſe which are ſown in the ſpring; this hath been ſuppoſed a perennial plant by many, but from many years obſervation, I could never find theſe plants continue after they had flowered and perfected their ſeeds.

The ſpecies of this plant are propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for, if they are kept till ſpring, the growing quality of them is often loſt; or at leaſt they lie ſome months in the ground before they grow; the plants are hardy, and if the ſeeds are ſown in a warm ſituation, they will endure the winter's cold very well without ſhelter; theſe autumnal plants are alſo much ſurer to produce ripe ſeeds than thoſe which are ſown in the ſpring, which are generally late in the ſeaſon before they flower; and conſequently if the autumn ſhould not prove very warm, their ſeeds would not be perfected.

The plants make a pretty variety for large borders in gardens, where, if they are ſuffered to drop their ſeeds, the plants will ariſe without any farther care; ſo that when a perſon is once furniſhed with the ſeveral varieties, he need be at no more trouble than to allow each of them a reſpective place where it may remain, and ſow itſelf; and with this culture, there is a greater certainty of preſerving the ſorts than in any other management; nor will they perhaps be entirely loſt in this way, if it ſhould happen that the ſeaſon ſhould prevent their ripening ſeed (as it ſometimes proves;) for when great quantities of the ſeeds have ſcattered upon the ground, ſome of them will be buried ſo deep, in ſtirring the earth, as not to grow the firſt year; which, upon being turned up

to the air the ſucceeding year, will come up as well as new ſeeds.

CESTRUM. Lin. Gen. Plant. 231. Jaſminoides. Dill. Nov. Gen. 170. Baſtard Jaſmine.

The CHARACTERS are,

It hath a ſhort tubular empalement of one leaf, which is indented at the top into five parts, which are erect. The flower is funnel-ſhaped, of one petal, having a long cylindrical tube, which ſpreads open at the top, where it is cut into five equal ſegments; it hath five ſlender ſtamina the length of the tube, to which they adhere, and are terminated by roundiſh four-cornered ſummits. The oval cylindrical germen is ſituated in the empalement, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by an obtuſe thick ſtigma. The germen afterward becomes an oval oblong berry with one cell, incloſing ſeveral roundiſh ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CESTRUM (*Nocturnum*) floribus pedunculatis. Hort. Cliff. 490. *Ceſtrum with flowers ſtanding upon foot-ſtalks.* Jaſminoides foliis Piſhaminis, flore vireſcente noctu odoratiſſimo. Hort. Elth. 183. tab. 153. *Baſtard Jaſmine with leaves of Piſhamin, and a greeniſh flower, ſmelling very ſweetly in the night.*
2. CESTRUM (*Diurnum*) floribus ſeſſilibus. Hort. Cliff. 491. *Ceſtrum with flowers growing to the branches.* Jaſminoides laureolæ folio, flore candido interdiu odorato. Hort. Elth. 186. tab. 154. *Baſtard Jaſmine with a Spurge Laurel leaf, and a white flower, ſmelling in the day.*
3. CESTRUM (*Nervoſum*) foliis lanceolatis oppoſitis nervis tranſverſalibus, pedunculis ramoſis. *Ceſtrum with ſpear-ſhaped leaves growing oppoſite, having tranſverſe veins, and branching foot-ſtalks to the flowers.* Jaſminoides Americanum, lauri folio, flore albo odorato. Houſt. MSS. *Baſtard Jaſmine of America with a Bay leaf, and a white, ſweet, ſmelling flower.*
4. CESTRUM (*Spicatum*) foliis ovato-lanceolatis, floribus ſpicatis, alaribus & terminalibus. *Ceſtrum with oval ſpear-ſhaped leaves, and flowers growing in ſpikes from the ſides and tops of the branches.*
5. CESTRUM (*Confertum*) foliis oblongo-ovatis, obliquis, floribus alaribus confertis, tubo longiſſimo & tenuiſſimo. *Ceſtrum with oblong oval leaves which are oblique, and flowers growing in cluſters from the ſides of the branches, with a very long ſlender tube.*
6. CESTRUM (*Venenatum*) foliis lanceolatis obliquis, floribus alaribus, pedunculis folioſis. *Ceſtrum with oblique ſpear-ſhaped leaves, flowers proceeding from the ſides of the branches, and leafy foot-ſtalks.* Jaſminum laurinis foliis, flore pallidè luteo, fructu atrocæruleo polypyreno venenato. Sloan. Hiſt. Jam. 2. p. 196. *Jaſmine with Bay leaves, a pale yellow flower, and a dark blue fruit with many ſeeds, which are poiſonous.*

The firſt ſort was many years paſt raiſed in the curious gardens of the Ducheſs of Beaufort, at Badmington, in Glouceſterſhire, and was from thence communicated to ſeveral gardens in England and Holland, where in the latter it paſſes under the title of Badmington Jaſmine to this time. This grows naturally in the iſland of Cuba, from whence I received the ſeeds by the title of Dama de Noche, i. e. Lady of the Night; which appellation I ſuppoſe was given it, from the flowers ſending out a ſtrong odour after the ſun is ſet.

It riſes with an upright ſtalk about ſix or ſeven feet high, covered with a grayiſh bark, and divides upward into many ſlender branches, which generally incline to one ſide; and are garniſhed with leaves placed alternate, which are near four inches long, and one and a half broad, ſmooth on their upper ſide, of a pale green, and on their under ſide they have ſeveral tranſverſe veins, and are of a ſea-green colour, having ſhort foot-ſtalks. The flowers are produced at the wings of the leaves, in ſmall cluſters, ſtanding upon ſhort foot-ſtalks, each ſuſtaining four or five flowers, which have very ſhort empalements, with long ſlender tubes, which are enlarged at the top, where they are cut into five parts which are reflexed; theſe are of an herbaceous colour; they appear in Auguſt, but are not ſucceeded by berries in this country; but thoſe which I received from America were ſmall, and of a dark brown colour, incloſing ſeveral ſeeds.

The ſeeds of the ſecond ſort were ſent me from the Havannah, by the title of Dama de Dio, or Lady of the Day; this riſes with an upright ſtalk to the height of ten or twelve feet, covered with a ſmooth light green bark, dividing upward into many ſmaller branches, garniſhed with ſmooth leaves near three inches long, and one and a half broad, of a lively green colour, and the conſiſtence of thoſe of the Spurge Laurel; theſe are ranged alternately on the branches. Toward the upper part of the ſhoots come out the flowers from the wings of the leaves, ſtanding in cluſters cloſe to the branches; they are very white, ſhaped like thoſe of the former ſort, and ſmell ſweet in the day time, from whence it had the appellation of Lady of the Day. The berries of this are ſmaller than thoſe of the firſt ſort. This flowers in September, October and November.

The third ſort was ſent me from Carthagena in New Spain, near which place it grows naturally; this riſes with a ſhrubby ſtalk five or ſix feet high, covered with a brown bark, and divides upward into many ſmall branches, garniſhed with ſpear-ſhaped leaves, about four inches long, and little more than one broad; they are ſmooth, of a light green, and have many horizontal veins running from the midrib to the ſides, and are placed oppoſite. From the wings of the leaves, toward the upper part of the branches, are produced the flowers, ſtanding upon branching foot-ſtalks, each ſuſtaining four or five flowers, whoſe tubes are ſwelling at their baſe, juſt above the empalement, but contract upward to the mouth, where the petal is cut into five broad ſegments which ſpread flat; they are white, but without ſcent.

The fourth ſort was ſent me from Carthagena with the former. This riſes with a ſhrubby ſtalk ten or twelve feet high, covered with a light gray bark, and ſends out many branches the whole length, garniſhed with oval ſpear-ſhaped leaves, ſtanding without order; they are two inches and a half long, and one and a half broad, of a light green, with ſlender foot-ſtalks. The flowers come out in looſe ſpikes from the ſide, and alſo the end of the branches, which are ſhaped like thoſe of the firſt ſort, and are of a whitiſh green colour, without ſcent. Theſe are ſucceeded by roundiſh purple berries, the ſize of large Peaſe, which have a ſoft juicy pulp, filled with flat ſeeds.

The fifth ſort riſes with ſeveral ſhrubby ſtalks eight or ten feet high, covered with a white ſmooth bark, ſending out many irregular branches, garniſhed with oblong oval leaves, which at their baſe are longer on one ſide, ſo that the foot-ſtalk is oblique; they are placed on the branches without order, and are of a pale green. The flowers come out in cluſters from the ſide of the branches, many of them ariſing from the ſame point; theſe have very ſlender long tubes, which are cut at the top into five acute ſegments which are erect. They are of a pale yellow, and without ſcent.

The ſixth ſort grows naturally in Jamaica, from whence it was ſent me by the late Dr. Houſtoun. This riſes with a woody ſtem eight or nine feet high, covered with a ſmooth brown bark, and ſends out many branches on the ſide which grow erect, garniſhed with oval ſpear-ſhaped leaves, whoſe foot-ſtalks are ſhort; they are five inches long, and two broad, ſmooth, of the conſiſtence with Bay leaves, and are placed alternate on the branches. From the wings of the leaves the flowers are produced, moſt part of the length of the branches; the foot-ſtalks of the flowers are garniſhed with ſmall leaves, ſtanding between each flower in a ſingular manner, the flowers

riſing one above the other; and between, or oppoſite to each, is one, and ſometimes two leaves, of the ſame form with thoſe on the branches. The flowers are of a pale yellow, and emit a diſagreeable odour. Theſe are ſucceeded by oval berries of a Violet colour, full of juice, each containing ſeveral flat ſeeds; they are reckoned very poiſonous, ſo have the appellation of Poiſon Berries in Jamaica.

This has been, by many of the writers on botany, ſuppoſed to be the ſame with the firſt; but any perſon who has ſeen both ſorts growing, cannot doubt of their being diſtinct ſpecies; the ſhape and ſize of the leaves are very different, as are alſo their flowers and berries. Some have alſo ſuppoſed that the Parqui of Pere Feuillé, is the ſame with this, but that is a great miſtake; for the flowers of this plant are produced in looſe bunches at the extremity of the branches, whereas thoſe of this ſort come out from the ſide, at the foot-ſtalks of the leaves; ſo that this plant is certainly different from either of theſe, but approaches neareſt to the third.

The fifth ſort I take to be the ſame as Pere Plumier's Jaſminum aliud arboreſcens, foliis ſolani, minus; for by an imperfect ſpecimen of his plant which was ſhewn me, the leaves appear the ſame, but as the ſpecimen was without flower or fruit, ſo I could not determine it.

The firſt and ſecond ſorts produce their flowers every year in England, but the others do but ſeldom flower here; but as they retain their leaves all the year, ſo they make a pretty variety in the ſtove, during the winter ſeaſon; and when they flower, the branches are commonly well garniſhed at their joints with bunches of flowers, ſo they make a fine appearance at that time.

All theſe plants grow naturally in very hot countries, ſo cannot be preſerved in England without artificial heat; therefore require to be placed in a warm ſtove, eſpecially in the winter. The two firſt are hardier than the others; theſe I have kept ſeveral years in a dry ſtove, with a moderate ſhare of heat in winter, and in the middle of ſummer have ſet them in the open air, in a warm ſituation. With this management I have found them thrive, and produce flowers much better than when they have been placed in a greater heat; but I have often endeavoured to keep theſe plants through the winter, in a green-houſe, or a glaſs caſe, without fire, but could never ſucceed; for by the end of January, they commonly decayed.

The other ſorts require a larger ſhare of heat, eſpecially when the plants are young; therefore they ſhould be plunged in the tan-bed of the bark-ſtove, otherwiſe they will loſe their leaves in winter, if they are not quite deſtroyed; but after three or four years growth, they will bear to be treated more hardily, provided they are inured to it gradually.

Theſe plants may be propagated from ſeeds, or by cuttings. Thoſe which come from ſeeds are always the moſt vigorous, and ſtraiteſt plants; but as they do not produce ſeeds in England, ſo the other method is generally practiſed, becauſe their ſeeds are rarely brought hither.

The beſt time to plant theſe cuttings is about the end of May, by which time the ſhoots will have had time to recover their ſtrength, after their confinement during the winter ſeaſon. The ſhoots which come out from the lower part of the ſtalks, ſhould always be choſen for this purpoſe. Theſe ſhould be cut about four inches long, and five or ſix of them may be planted in each halfpenny pot; for the cuttings of moſt ſorts of exotic plants, will ſucceed better when they are planted in theſe ſmall pots, than they do in larger, as I have many years experienced. The earth in which theſe are planted, ſhould be freſh and light, but not full of dung: when the cuttings are planted, the earth muſt be preſſed pretty cloſe to them, and then gently watered; after which the pots muſt be plunged into a moderate hot-bed of tanners bark, and every day ſhaded from the ſun. They muſt alſo have freſh air admitted to them in warm weather, and two or three times a week refreſhed with water. With this management the cuttings will put out roots in five or ſix weeks, when they ſhould be gradually expoſed to the ſun; and when they begin to put out ſhoots, they muſt have a greater ſhare of freſh air admitted to them, to prevent their drawing up weak; and their waterings ſhould be oftener repeated, but given in ſmall quantities, for their young tender fibres will not endure much wet. When they have made good roots, they ſhould be carefully ſhaken out of the pots, and each put into a ſeparate ſmall pot, filled with the ſame ſort of earth as before; then give them ſome water, to ſettle the earth to their roots, and plunge them again into the tan-bed; obſerving if any of their leaves hang down, to ſhade them from the ſun in the middle of the day, until they have taken freſh root; after which they ſhould have a large ſhare of air in warm weather, to ſtrengthen them before winter. Their waterings in the ſummer ſhould be frequent; and if they are ſprinkled all over their leaves, it will waſh and cleanſe them from filth, which will greatly promote their growth; but their roots muſt not be kept too moiſt.

In the autumn the plants of the three laſt ſorts muſt be removed into the bark-ſtove, and plunged into the tan-bed, where they muſt be treated in the ſame manner as other tender exotic plants; but the two firſt ſorts may be treated otherwiſe, eſpecially when they have obtained ſtrength, yet the firſt winter they may be managed in the ſame way as the others. There muſt be great care had in watering of theſe plants in winter, for they are all (except the ſecond ſort) very impatient of moiſture; ſo that they are ſoon killed by being over-watered.

If the ſeeds of theſe are procured from the countries where they grow naturally, they ſhould be ſowed in ſmall pots filled with the earth before directed, and plunged into a moderate hot-bed of tanners bark, giving them now and then a little water. Sometimes the ſeeds will come up the ſame year, but they very often lie in the ground till the ſpring following; ſo that if the plants do not appear in ſix or ſeven weeks after the ſeeds are ſown, they will not come up that ſeaſon; in which caſe the pots may be plunged in the tan-bed of the ſtove, between the other plants, where they will be ſhaded from the ſun, and but little water given them; in this ſituation they may remain till the following ſpring, when they ſhould be removed, and plunged into a freſh hot-bed, which will bring up the plants in a ſhort time, provided the ſeeds were good.

When the young plants are fit to remove, they ſhould be carefully ſhaken out of the pots, and each planted into a ſeparate pot filled with the before-mentioned earth, and plunged into the hot-bed again, and afterward treated in the ſame way as hath been directed for the plants raiſed from cuttings.

CETERACH. See ASPLENIUM.

CHÆROPHYLLUM. Lin. Gen. Plant. 320. Tourn. Inſt. R. H. 314. tab. 166. [χαιρόφυλλον, of χαίρω, to rejoice, and φύλλον, *Gr.* a leaf, becauſe the leaves, ſteeped in wine, and drank, will exhilarate and chear melancholy perſons.] Chervil.

The CHARACTERS are,

It is an umbelliferous plant; the principal umbel is ſpreading and hath no involucrum, compoſed of ſeveral ſmall ones, called rays; the ſmall ones have a five-leaved involucrum, which is reflexed; the flowers have five heart-ſhaped inflexed petals, and five ſtamina, which are terminated by roundiſh ſummits: the germen is ſituated below the flower, ſupporting two reflexed ſtyles, crowned with obtuſe ſtigmas. The germen afterward becomes an oblong pointed fruit, dividing in two parts, each having one ſeed, which is convex on one ſide and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The

The SPECIES are,

1. CHÆROPHYLLUM (*Sylveſtre*) caule ſtriato geniculis tumidiuſculis. Flor. Suec. 2. N. 257. *Wild Chervil with ſtriated ſtalks, whoſe joints are ſwelling.* Myrrhis ſylveſtris ſeminibus lævibus. C. B. P. 160. *Wild Myrrh with ſmooth ſeeds.*
2. CHÆROPHYLLUM (*Bulboſum*) caule lævi, geniculis tumidis. Lin. Sp. Plant. 258. *Chervil with a ſmooth ſtalk, and ſwelling joints.* Myrrhis tuberoſa & nodoſa conyophillon. Mor. Umb. 67. *Tuberous and knotted Myrrh with a Hemlock leaf.*
3. CHÆROPHYLLUM (*Temulum*) caule ſcabro, geniculis tumidis. Lin. Sp. Plant. 258. *Chervil with a rough ſtalk, and ſwelling joints.* Chærophyllum ſylveſtre. C. B. P. 152. *Wild Chervil.*
4. CHÆROPHYLLUM (*Aureum*) caule æquali, foliolis inciſis acutis. Lin. Sp. Plant. 258. *Chervil with an equal ſtalk, and leaves cut into acute ſegments.* Myrrhis perennis alba minor, foliis hirſutis, ſemine aureo. Mor. Umb. 282.
5. CHÆROPHYLLUM (*Hirſutum*) caule æquali, foliolis inciſis acutis, ſeminibus ſubulatis. Lin. Sp. Plant. 371. *Wild Chervil with an equal ſtalk, whoſe ſmall leaves are cut acutely, and awl-ſhaped ſeeds.* Myrrhis paluſtris, latifolia rubra. C. B. P. 161.

The firſt ſort grows naturally on the ſide of highways, and the borders of the fields in moſt parts of England, ſo is never cultivated in gardens. It is frequently called Cow Parſley, but for what reaſon I cannot ſay, becauſe there are few animals who care to eat it, except the aſs; for it is reckoned to have ſomething of the quality of Hemlock, but in a leſs degree. It is a weed which ſhould be rooted out from all paſtures in the ſpring, for it is one of the moſt early plants in ſhooting; ſo that by the beginning of April the leaves are near two feet high. The ſeeds of this plant ſpread greatly over the ground, and as the roots are perennial, they are often very troubleſome weeds to deſtroy.

The ſecond ſort grows naturally in Hungary and Iſtria. This plant hath a thick tuberous root, from which come forth ſeveral leaves reſembling thoſe of Wild Chervil, which ſpread horizontally near the ground. The ſtalks riſe ſix or ſeven feet high, which are ſpotted with purple, and garniſhed with leaves of the ſame form as thoſe below. The knots at the joints of the ſtalks ſwell out on every ſide, at which is placed one of theſe divided leaves; the ſtalks are terminated by ſmall umbels of white flowers, which are ſucceeded by long narrow ſeeds. It flowers in June, and the ſeeds ripen in Auguſt. If the ſeeds of this plant are permitted to ſcatter, the plants will come up without any farther care, and only require to be kept clean from weeds.

The third ſort grows naturally on the ſides of footwalks, and on the borders of woods in many parts of England, ſo is not cultivated in gardens.

The fourth ſort grows naturally in the paſtures about Geneva, and in Switzerland; this hath a perennial root, from which come out in the ſpring many leaves, ſhaped like thoſe of the firſt, but narrower, hairy, and more divided. The ſtalks are channelled, and riſe three feet high, garniſhed with the like leaves; theſe are terminated by large umbels, formed of many ſmall ones, which are compoſed of flowers, having five heart-ſhaped petals, which turn inward; theſe are ſucceeded by long pointed ſeeds. The whole plant has an aromatic ſmell and taſte.

The fifth ſort grows naturally on the Alps, and the Helvetian mountains. It is a perennial plant, ſomewhat reſembling the firſt ſort, but their leaves are hairy, and their ſegments are broader; the ſtalk riſes four feet high, terminated by large umbels of flowers, which in ſome plants are red, and in others white; theſe are ſucceeded by long pointed ſeeds, two being joined in the ſame cover.

Theſe plants are preſerved in botanic gardens for variety; but as their uſe either in medicine or the kitchen are not known, they are rarely admitted into other gardens.

CHAMÆCERASUS. See CERASUS and LONICERA.

CHAMÆCISTUS. See CISTUS.

CHAMÆCLEMA. See GLECHOMA.

CHAMÆCYPARISSUS. See SANTOLINA.

CHAMÆDAPHNE. See RUSCUS.

CHAMÆDRYS. See TEUCRIUM.

CHAMÆLÆA. See CNEORUM.

CHAMÆMELUM. See ANTHEMIS.

CHAMÆMESPILUS. See MESPILUS.

CHAMÆMORUS. See RUBUS.

CHAMÆNERION. See EPILOBIUM.

CHAMÆPITYS. See TEUCRIUM.

CHAMÆRHODODENDRON. See AZALEA and KALMIA.

CHAMÆRIPHES. See CHAMÆROPS.

CHAMÆROPS. Lin. Gen. Plant. 1084. Chamæriphes. Pont. 10. Dod. Pempt. 820. Dwarf Palm, or Palmetto.

The CHARACTERS are,

It hath male and hermaphrodite flowers in diſtinct plants; the hermaphrodite flowers are all included in one common ſpatha or hood, which is compreſſed and bifid, and the ſpadix or club is branching; each flower hath a ſmall three-pointed empalement; they have one thick upright petal, which is cut into three parts, and turns inward at the top, and five compreſſed ſtamina which join at their baſe, terminated by narrow twin ſummits, joined to the interior part of the ſtamina. They have three roundiſh germen, each having a diſtinct ſtyle, which is permanent, terminated by pointed ſtigma. The three germen afterward become ſo many round berries, having one cell, each containing a ſingle ſeed. The male flowers are like the hermaphrodite, but the ſtamina are not diſtinct, nor have they any germen.

This genus of plants is joined with the other kinds of Palms by Dr. Linnæus, and placed in the appendix to his Genera Plantarum; but ſhould be ranged in his twenty-third claſs, or rather made a diſtinct claſs by themſelves, becauſe their manner of fructification is very different from moſt other plants.

The SPECIES are,

1. CHAMÆROPS (*Humilia*) frondibus palmatis, plicatis, ſtipitibus ſpinoſis. Hort. Cliff. 482. *Dwarf Palm with folding palmated leaves, and prickly foot-ſtalks.* Palma humilis, ſc. Chamæriphes. J. B. Hiſt. 1. 368. *Dwarf Palm, or Palmetto.*
2. CHAMÆROPS (*Glabra*) foliis flabelliformibus, maximis, ſtipitibus glabris. *Dwarf Palm with very large fan-ſhaped leaves, and ſmooth foot-ſtalks.* Palma non ſpinoſa humilima. *Dwarf Palm without ſpines, commonly called ſmall Palmetto Royal.*

The firſt ſort grows naturally in Spain, particularly in Andaluſia, where, in the ſandy land, the roots ſpread and propagate ſo faſt, as to cover the ground in the ſame manner as the Fern in England. The leaves of theſe plants are tied together to make beſoms for ſweeping.

This never riſes with an upright ſtem, but the foot-ſtalks of the leaves riſe immediately from the head of the root, and are armed on each ſide with ſtrong ſpines; they are flat on their upper ſurface, and convex on their under ſide. The center of the leaves are faſtened to the foot-ſtalk, which ſpread open like a fan, having many foldings, and at the top are deeply divided like the fingers of a hand; when they firſt come out, they are cloſed together like a fan when ſhut, and are faſtened together by ſtrong fibres which run along the borders of the leaves; and when the leaves ſpread open, theſe fibres or ſtrings hang from the ſides and ends; the borders of the leaves are finely ſawed, and have white narrow edgings; they are from nine to eighteen inches long, and near a foot broad in their wideſt part: as the lower leaves of the plants decay, their veſtiges remain, and form a ſhort ſtump above ground, in the ſame manner as our common male Fern does; from between the leaves comes out the ſpadix or club, which ſuſtains the flowers; this is covered with a thin ſpatha or hood, which falls off when the bunches open and di-

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vide. As all the plants of this ſort which I have ſeen flower were male, I cannot give any particular deſcription of their fructification.

This plant is commonly propagated here by heads, which ſometimes ſeparate from the main root; if theſe are carefully taken off with fibres and planted, they will grow; but the plants ſo raiſed are not ſo good as thoſe which are produced from ſeeds; ſo that if good ſeeds can be procured, that is by much the better way to propagate them. The ſeeds ſhould be ſown in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark; theſe muſt be refreſhed now and then with water. If the ſeeds are freſh, the plants will come up in two months; theſe riſe with a ſingle long-pointed leaf. When they appear they muſt be now and then refreſhed with water, but they muſt not have it in too great plenty. If the plants are not too cloſe to each other in the pots, they will not require to be tranſplanted the firſt year; therefore they ſhould remain in the tan-bed all the ſummer, but in warm weather they muſt have plenty of air admitted to them. In autumn the pots ſhould be removed into the ſtove, and, if they are plunged into the bark-bed the firſt winter, it will greatly forward the growth of the plants. The following ſpring the plants ſhould be carefully turned out of the pots, ſo as to preſerve their roots entire; for all the ſorts of Palms have tender roots, which, if they are cut off or broken, frequently kill the plants: then they ſhould be each planted into a ſeparate ſmall pot filled with light, ſandy, undunged earth, and plunged into a freſh hot-bed to encourage their taking root; the following ſummer they ſhould be gradually hardened, by raiſing the glaſſes pretty high, ſo as to admit a large ſhare of air to them, but they ſhould not yet be wholly expoſed to the open air. The autumn following the plants may be placed in a dry ſtove; but as the plants advance and get ſtrength, they may be treated more hardily, and in ſummer placed in the open air in a warm ſituation, and in winter may be preſerved in a warm green-houſe without artificial heat

As the plants advance in growth, they ſhould be put into larger pots; but when this is done, there muſt be great care taken, that their roots are not cut or broken, nor ſhould they have pots too large. In winter they muſt have but little water, and if they are expoſed to the open air in ſummer, they will not require much, unleſs the ſeaſon proves very warm and dry, in which caſe they may be ſparingly watered two or three times a week.

The ſecond ſort grows naturally in the Weſt Indies, where it never riſes with a ſtem; the foot-ſtalks of the leaves are rounder than thoſe of the former, and have no ſpines on their ſides. When the plants are old their leaves are three or four feet long, and upward of two broad; theſe are folded in the ſame manner as thoſe of the firſt, but the folds are broader, and the leaves are of a darker green; ſome of theſe plants have put out ſlender bunches of male flowers in England, which were too imperfect to form a deſcription.

This ſort riſes freely from ſeeds, which may be eaſily procured from the iſlands in America; theſe muſt be ſown in the ſame manner as the former, and the plants treated in the ſame way; but as they are natives of a warmer climate, they ſhould be conſtantly kept in the bark-ſtove, where, if they are carefully managed, they will make good progreſs.

I have received ſeeds from Carolina of a Dwarf Palm, which is very like this, if not the ſame; but the plants do not make ſo good progreſs here, as thoſe which came from Jamaica; the berries were ſo like, that I could not diſtinguiſh them; but as the plants advance, if they are different, it will appear.

CHAMÆRUBUS. See RUBUS.

CHAMÆSYCE. See EUPHORBIA.

CHEIRANTHUS. Lin. Gen. Plant. 730. Leucojum. Tourn. Inſt. R. H. 220. tab. 107. Stock Gilliflower and Wall-flower, in French *Girofflier ou Violier*.

The CHARACTERS are,

It hath a four-leaved compreſſed empalement; the two outer leaves are ſwelling at their baſe. The flower hath four petals placed in form of a croſs; theſe are longer than the empalement. It hath ſix parallel ſtamina, which are the length of the empalement, two of which are between the ſwelling leaves of the empalement, the other are a little ſhorter, and are terminated by erect bifid ſummits, which are reflexed at the top. It hath a four-cornered priſmatic germen as long as the ſtamina, ſupporting a very ſhort compreſſed ſtyle, crowned with an oblong divided ſtigma, which is reflexed and permanent. The germen afterward becomes a long compreſſed pod with two cells, opening with two valves, filled with compreſſed ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetrandynamia ſiliquoſa, the flowers having two long and four ſhorter ſtamina, and the ſeeds are lodged in long pods.

The SPECIES are,

1. CHEIRANTHUS (*Eryſimoides*) foliis lineari-lanceolatis dentatis caule recto, ſiliquis tetragonis. *Cheiranthus with narrow, indented, ſpear-ſhaped leaves, an upright ſtalk, and four-cornered pods.* Heſperis leucoii folio ſerrato, ſiliquâ quadrangulâ. Tourn. Inſt. R. H. 223. *Dames Violet with a ſawed Wall-flower leaf, and a quadrangular pod.*
2. CHEIRANTHUS (*Integerrimis*) foliis lanceolatis integerrimis, caule erecto, ſiliquis tetragonis. *Cheiranthus with ſpear-ſhaped entire leaves, an upright ſtalk, and quadrangular pods.* Heſperis leucoii folio non ſerrato, ſiliquâ quadrangulâ. Tourn. Inſt. R. H. 223. *Dames Violet with a Wall-flower leaf not ſawed, and a quadrangular pod.*
3. CHEIRANTHUS (*Cheiri*) foliis lanceolatis, acutis, glabris ramis angulatis. Hort. Cliff. 334. *Cheiranthus with ſpear-ſhaped, pointed, ſmooth leaves.* Leucojum luteum vulgare. C. B. P. *Common yellow Leucojum, or Wall-flower.*
4. CHEIRANTHUS (*Anguſtifolium*) foliis linearibus, unguibus petalorum calyce longioribus. *Cheiranthus with narrow leaves, and the necks of the petals longer than the empalement.* Leucojum anguſtifolium Alpinum flore ſulphureo. H. R. Par. *Narrow-leaved Wall-flower of the Alps, with a ſulphur-coloured flower.*
5. CHEIRANTHUS (*Annuus*) foliis lanceolatis, ſubdentatis, obtuſis, incanis, ſiliquis cylindricis apice acutis, caule herbaceo. Lin. Sp. Plant. 662. *Cheiranthus with ſpear-ſhaped leaves ſomewhat indented, obtuſe, and hoary cylindrical pods, with acute points and an herbaceous ſtalk.* Leucojum incanum minus. C. B. P. 200. *Leſſer hoary Stock Gilliflower, commonly called the Ten Weeks Stock.*
6. CHEIRANTHUS (*Incanus*) foliis lanceolatis, integerrimis, obtuſis, incanis, ſiliquis apice truncatis, compreſſis, caule ſuffruticoſo. Hort. Upſal. 187. *Cheiranthus with very entire ſpear-ſhaped leaves, which are obtuſe and hoary, compreſſed pods with truncated points, and a ſhrubby ſtalk.* Leucojum incanum majus. C. B. P. 200. *Greater hoary Stock Gilliflower, commonly called the Queen's Stock Gilliflower.*
7. CHEIRANTHUS (*Coccineus*) foliis lanceolatis undatis, caule erecto indiviſo. *Cheiranthus with waved ſpear-ſhaped leaves, and an upright undivided ſtalk.* Leucojum incanum majus Coccineum. Mor. Hiſt. 2. 240. *Greater hoary Stock Gilliflower with a ſcarlet flower, commonly called the Brompton Stock Gilliflower.*
8. CHEIRANTHUS (*Albus*) foliis lanceolatis, integerrimis, obtuſis, incanis, ramis floriferis axillaribus, caule ſuffruticoſo. *Cheiranthus with hoary, entire, ſpear-ſhaped, obtuſe leaves, flower branches proceeding from the ſides, and a ſhrubby ſtalk.* Leucojum album ſive purpureum ſive violaceum. Ger. *The white, purple, or Violet Stock Gilliflower.*
9. CHEIRANTHUS (*Glabrus*) foliis lanceolatis, acutis, petiolatis, viridibus, caule ſuffruticoſo. *Cheiranthus with ſpear-ſhaped acute leaves, which are green, having foot-ſtalks, and a ſhrubby ſtalk.* Leucojum album odoratiſſimum, folio viridi. C. B. P. 2. 102. *Sweeteſt white Stock Gilliflower with a green leaf, commonly called white Wall-flower.*

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10. CHEIRANTHUS (*Seniſtalis*) foliis conferto-capitatis, recurvatis, undatis. Lin. Sp. Plant. App. 1198. *Cheiranthus with leaves growing cloſe together in heads, which turn backward, and are waved.*

11. CHEIRANTHUS (*Littoreus*) foliis lanceolatis, ſubdentatis ſubtomentoſis ſubcarnoſis, petalis emarginatis, ſiliquis tomentoſis. Lin. Sp. 925. *Cheiranthus with ſpear-ſhaped, indented, woolly leaves, emarginated petals, and woolly pods.* Leucojum maritimum anguſtifolium. C. B. P. 221. *Narrow-leaved Sea Stock-Gilliflower.*

12. CHEIRANTHUS (*Maritimus*) foliis lanceolatis acutiuſculis, caule diffuſo, antheris eminentibus. Amœn. Acad. 4. p. 280. *Cheiranthus with acute ſpear-ſhaped leaves, a diffuſed ſtalk, and eminent antheræ.* Heſperis maritima, ſupina, exigua. Tourn. Inſt. 223. *Small, low, maritime Dames Violet, commonly called Dwarf, or Virginia Stock Gilliflower.*

13. CHEIRANTHUS (*Chius*) foliis obovatis aveniis emarginatis, ſiliquis apice ſubulatis. Hort. Upſal. 187. *Cheiranthus with oval emarginated leaves and pods, whoſe ſummits are awl-ſhaped.* Heſperis ſiliquis hirſutis flore parvo rubello. Hort. Elth. 180. tab. 147. *Dames Violet with hairy pods, and a ſmall reddiſh flower.*

14. CHEIRANTHUS (*Tricuſpidatus*) ſiliquarum apicibus tridentatis foliis lyratis. Hort. Cliff. 335. *Cheiranthus with pods indented in three parts at the point, and lyre-ſhaped leaves.* Heſperis maritima latifolia ſiliquâ tricuſpide. Tourn. Inſt. R. H. 223. *Broad-leaved maritime Dames Violet, with a three-pointed pod.*

15. CHEIRANTHUS (*Sinuatis*) foliis tomentoſis obtuſis ſubſinuatis, ramis integris, ſiliquis muricatis. Lin. Sp. 926. *Cheiranthus with woolly, obtuſe, ſinuated leaves, intire branches, and rough pods.* Leucojum maritimum ſinuato folio. C. B. P. 200.

16. CHEIRANTHUS (*Triſtis*) foliis linearibus ſubſinuatis, floribus ſeſſilibus petalis undatis, caule ſuffruticoſo. Lœfl. *Cheiranthus with linear indented leaves, flowers cloſe to the ſtalk, waved petals, and a ſhrubby ſtalk.* Leucojum minus breviore folio, obſolete flore. Barrel. It. 999.

17. CHEIRANTHUS (*Lacerus*) foliis lacero-dentatis acuminatis, calycibus piloſis, ſiliquis nodoſis mucronatis. Lin. Sp. 926. *Cheiranthus with torn, indented, pointed leaves, hairy empalements, and knobbed, acute-pointed pods.* Leucojum Luſitanicum purpureum, foliis eleganter dentatis. Parad. Bat. 193.

The firſt ſort grows naturally in the ſouth of France, in Spain and Italy; this is an annual plant, which riſes a foot high, with an angular channelled ſtalk, which branches upward on every ſide; theſe are garniſhed with long, narrow, green leaves, reſembling thoſe of the common Wall-flower, but are ſharply indented on their edges, ſitting cloſe to the ſtalks; at the extremity of the branches the flowers are produced in looſe ſpikes; theſe are yellow, having four petals ſituated in form of a croſs, greatly reſembling thoſe of the common yellow Wall-flower, but have no ſcent; theſe are ſucceeded by long four-cornered pods, filled with brown ſeeds. It flowers in June, and the ſeeds are ripe in autumn.

The ſecond ſort grows naturally in Hungary and Iſtria; this is alſo an annual plant, riſing with an upright ſtalk nearly the ſame height as the other, but doth not branch out as that doth. The leaves are broader, ſmoother, and not pointed as thoſe of the other; they ſtand alternately on the ſtalk without any viſible foot-ſtalk, and are of a deep green. The flowers come out in looſe ſpikes at the top of the ſtalks; theſe are ſmall, and of a pale yellow without ſcent, and are ſucceeded by four-cornered pods like thoſe of the former. It flowers, and the ſeeds are ripe at the ſame time with the former.

Theſe two plants have by ſome perſons been ſuppoſed the ſame, but I have cultivated them thirty years, and have never found them alter. If their ſeeds are permitted to ſcatter, the plants will come up without care, and will thrive on any ſoil or ſituation, and upon walls, or in rubbiſh, in the ſame manner as the common Wall-flower.

The ſecond ſort grows naturally upon old walls and buildings in many parts of England; it is alſo cultivated in gardens for the fragrancy of its flowers. When theſe plants grow upon walls or buildings, they ſeldom riſe more than ſix or eight inches high, having very tough roots and firm ſtalks; the leaves are ſhort, and ſharp-pointed, and the flowers are ſmall, but in gardens the plants will grow two feet high, and branch out wide on every ſide; the leaves are broader, and the flowers much larger; but in ſevere winters, when theſe plants are frequently killed in the gardens, thoſe upon the walls will receive no injury, though they are much more expoſed to the winds and froſts; for as theſe plants are ſtunted, and of a firmer texture, having but little juice, the cold never affects them.

There is a variety of this with very double flowers, which is propagated in the gardens from ſlips planted in the ſpring, which readily take root. There is one ſort of this with variegated leaves, which is preſerved in the gardens, but this is not quite ſo hardy as the plain.

The large, yellow, bloody Wall-flower, is alſo ſuppoſed to be a variety of this, which has been improved by culture; and this I am inclinable to believe, becauſe I have frequently obſerved many of them degenerate to the common ſort; but although I have many years ſowed the ſeeds of the common ſort from the walls, yet I could never find them alter, except in being larger, but not any of them approached toward the other varieties. The large bloody Wall-flower will frequently riſe with double flowers from ſeeds, if they are carefully ſaved from ſuch plants as have five petals; and theſe double flowers may be propagated by ſlips as the common ſort, but the plants ſo raiſed will not produce ſuch large ſpikes of flowers as thoſe which are propagated by ſeeds.

There is alſo another variety with double blood-coloured flowers, whoſe petals are ſhorter and more numerous, approaching nearer to the common double Wall-flower, but much larger. This is called the Old Bloody Wall-flower. It is propagated from ſlips, in the ſame manner as the other double ſorts. There are ſome intermediate varieties of theſe flowers, differing in the ſize and colour of their petals, which the floriſts diſtinguiſh as different; but as they conſtantly vary from ſeeds, they do not deſerve notice.

The fourth ſort grows naturally upon the Alps, and the mountains in Italy, where it rarely riſes above ſix inches high; the leaves are very narrow, and the flowers grow in cloſe ſpikes at the end of the branches; they are of a pale yellow, or brimſtone colour, and the necks of the petals are much longer than the empalement; theſe have but little ſcent. When this ſort is cultivated in gardens, it grows as large as the common Wall-flower, and makes a finer appearance, for the ſpikes of flowers are longer, and they grow much cloſer together; but they have little ſcent, which occaſioned their being firſt neglected, and at preſent there are few, if any, of the plants remaining in the Engliſh gardens. It was titled the Straw-coloured Wall-flower by the gardeners.

The ſorts with ſingle flowers produce ſeeds in plenty, from which the plants are raiſed; but the largeſt and deepeſt coloured flowers ſhould always be ſelected for ſeeds, becauſe from ſeeds carefully ſaved, there will be fewer of the plants degenerate. The ſeeds ſhould be ſown in April, upon poor or undunged ſoil, and when the plants are fit to remove, they ſhould be tranſplanted into nurſery-beds, at about ſix inches diſtance each way, obſerving to water and ſhade them until they have taken freſh root; after which they will require no farther care, but to keep them clean from weeds all the ſummer; and at Michaelmas they may be tranſplanted into the borders of the flower-garden where they are deſigned to remain, that the plants may get good roots before the froſt comes on. This is the method which is commonly practiſed with theſe flowers; but if the ſeeds are ſown upon poor land,

where they are deſigned to remain, and not tranſplanted, they will thrive, and endure the froſt in winter much better than thoſe which are removed; ſo that upon ruins or rubbiſh the ſeeds of theſe plants may be ſown, where they will thrive and continue much longer than in good land; and in ſuch places, if they are properly diſpoſed, they will be very ornamental, and their flowers having a ſtrong odour, will perfume the air to a conſiderable diſtance.

The Stock Gilliflowers are diſtinguiſhed from the Wall-flowers by their hoary leaves. Theſe agree with each other in their botanical characters, ſo are generally included in the ſame genus; but the gardeners remove them to a conſiderable diſtance, and treat them very differently; yet there is ſo great affinity between them, as that they may be treated in the ſame manner, and both will grow equally upon old walls or ruins; but as they have been ſeparated by moſt of the writers on gardening, I have, in compliance with that cuſtom, ranged them accordingly.

The fifth ſort is now generally known by the appellation of ten Weeks Stock, but it is what was formerly titled Annual Stock Gilliflower, which of late has been applied to another ſpecies, which is biennial. This riſes with a round ſmooth ſtalk about two feet high, dividing into ſeveral branches upward, garniſhed with ſpear-ſhaped hoary leaves, which are rounded at their ends, and placed without order, ſometimes being almoſt oppoſite, and others alternate, and frequently three or four together of unequal ſizes; at the ends of the branches the flowers are produced in looſe ſpikes, which are placed alternate; the empalement of the flower is large, erect, and ſlightly cut into ſeveral acute parts at the top; the petals are large and heart-ſhaped, ſpreading open in form of a croſs; the pods are long, cylindrical, and have a longitudinal furrow on one ſide, which opens in two cells, which are filled with flat roundiſh ſeeds, having a thin border. It flowers in July and Auguſt, and the ſeeds ripen in October.

Of this ſort there are the red, the purple, the white, and ſtriped, with ſingle flowers, and the ſame colours with double flowers; theſe are very great ornaments in the borders of the flower-garden in the autumn, when there is a ſcarcity of other flowers; and if the ſeeds are ſown at two or three different times, the flowers may be continued in ſucceſſion near three months.

The firſt ſowing ſhould be about the middle of February, upon a very ſlender hot-bed, juſt to bring up the plants, which muſt be guarded againſt froſt; and when they are fit to remove, they ſhould be tranſplanted into the nurſery beds, at about three or four inches diſtance, obſerving to water and ſhade them till they have taken root, and afterward to keep them clean from weeds; in theſe beds they may remain five or ſix weeks to get ſtrength, and may then be planted into the borders of the flower-garden, where they are to remain: if theſe are tranſplanted when there is rain, they will ſoon take root, after which they will require no farther care. From theſe early plants good ſeeds may be expected, therefore ſome of the fineſt plants of each colour ſhould be preſerved, and marked for ſeeds, which, when ripe, ſhould be carefully cut before the froſt pinches it, and the ſtalks tied up in ſmall bundles, and hung up in a dry room till the pods are well dried, when the ſeeds may be rubbed out and preſerved for uſe.

The ſixth ſort is a biennial plant, though when the ſeeds are ſown early in the ſpring, the plants often flower the following autumn; but theſe plants which are ſo forward, are often killed in winter; therefore it is much better to ſow them in May, that the plants may not grow too rank the firſt ſeaſon; they will live through the winter, and produce large ſpikes of flowers the ſecond year.

This is commonly called the Queen's Stock Gilliflower by the gardeners, and differs greatly from the other ſorts, though many of the late botaniſts have ſuppoſed they were only ſeminal variations; but from near forty years experience in the culture of theſe plants, I can affirm, that the ſpecies here enumerated, do not alter from one to the other, though they frequently vary in the colour of their flowers.

It riſes with a ſtrong ſtalk, which is almoſt ſhrubby, a foot high or more, having oblong, ſpear-ſhaped, hoary leaves, which are frequently waved on their edges, and turn downward at the extremity; from the ſtalk is ſent out many lateral branches, which are garniſhed with the ſame ſhaped leaves, but ſmaller; theſe ſide branches are each terminated by a looſe ſpike of flowers, each having an oblong woolly empalement, and conſiſt of four large roundiſh petals, which are indented at the end. Theſe uſually appear in May and June, but the ſame plants frequently continue flowering moſt part of the ſummer. The ſeeds ripen in autumn, and the plants generally periſh ſoon after; but when any of them grow in dry rubbiſh, they will laſt two or three years and become ſhrubby; but thoſe with ſingle flowers, are not worth preſerving after they have perfected their ſeeds.

The flowers of this ſort vary in their colour; ſome are of a pale red, others are of a bright red, and ſome are curiouſly variegated, but thoſe of the bright red are generally moſt eſteemed. There is always a great number of double flowers produced, if the ſeeds are well choſen, frequently three parts in four of the plants will be double; and as the plants divide into many branches, they make a fine appearance during their continuance in flower.

The ſeventh ſort is known by the title of Brompton Stock Gilliflower, I ſuppoſe from its having been there firſt cultivated in England. This riſes with an upright, ſtrong, undivided ſtalk, to the height of two feet or more, garniſhed with long hoary leaves, which are reflexed, and waved on their edges, and at the top form a large head; out of the center of theſe ariſes the flower-ſtalk, which, when the plants are ſtrong, is frequently a foot and a half long, putting out two or three ſhort branches toward the bottom; the flowers of this kind have longer petals than any of the other ſorts, and are formed into a pyramidal ſpike; but thoſe with ſingle flowers are looſely diſpoſed, becauſe the flowers having but few petals, do not fill the ſpike, as thoſe do which are double; for theſe often have ſo many petals, as to render each flower as large and full as ſmall Roſes; and when they are of a bright red, make a pretty appearance, being excelled by none of the flowery tribe; but the plants of this ſort produce but one ſpike, in which it differs from all the other kinds, and being conſtant in this particular, I think is ſufficient to eſtabliſh a diſtinct ſpecies. This ſort is generally biennial, though many times the plants are preſerved longer; but they are always ſtronger the firſt year of their flowering, than they will be after; ſo that the ſeeds are ſown every ſpring, to continue a ſucceſſion of flowering plants.

The eighth ſort is the White Stock Gilliflower, which is of longer duration than either of the other ſorts. I have frequently had theſe plants live three or four years, which have become ſhrubby; their ſtalks have been three feet high, and branched out on every ſide, ſo as to appear like ſhrubs; theſe ſeldom ſend out flower-ſtalks from the center of the plant, but it is the ſide branches which produce the flowers, and theſe ſide branches divide into ſeveral other, which is not common to the other ſorts. There are always many double flowers riſe from ſeeds of this ſort, when they are well choſen; ſome years I have ſcarce had enough ſingle flowers to preſerve the kind. The varieties of this are few, ſometimes a few of the plants will produce pale fleſh-coloured flowers, and now and then ſome have been purple; and as that ſort of Stock Gilliflower, which is titled the Twickenham Purple, will ſometimes come with flowers variegated with white, I have been inclinable to think theſe two may be varieties of each other; and the rather, becauſe the plants agree with each other in their external habit; for neither of theſe put out their flower-ſtems from the center of the plants, but always on their

their ſide, ſo that theſe are undoubtedly a diſtinct ſpecies from the former.

The ninth ſort is known by the title of White Wall-flower, among the gardeners and floriſts. This riſes with a greeniſh ſtalk a foot high, dividing into many branches, garniſhed with narrow, ſmooth, ſpear-ſhaped leaves, of a lucid green, and of thicker conſiſtence than thoſe of any of the other ſorts; they come out without any order, are near three inches long, and about half an inch broad in the middle; the flowers are produced in looſe ſpikes at the end of the branches, which are of a pure white, and have a great fragrancy, eſpecially in an evening or in cloudy weather; the flowers are ſucceeded by oblong compreſſed pods like thoſe of the other ſpecies. There is a variety of this with double flowers, which is propagated by cuttings or ſlips, in the ſame manner as the double Wall-flowers; but theſe plants require protection from great rains, and froſt in winter; ſo if they are planted in pots, and placed under a common frame in winter, where in mild weather they may enjoy the open free air, and be covered from hard rains and froſt, they may be preſerved ſeveral years.

Sometimes many of the plants with double flowers will come up from ſeeds, but not ſo frequent as ſome of the other ſorts. I have for ſeveral years raiſed more than one hundred plants in a ſeaſon, without obtaining one double flower; and from the ſeeds of theſe, have the following year had more than half the plants with double flowers: but this is not to be expected often.

The ſeeds of the tenth ſort were ſent me by Dr. Linnæus, from Upſal in Sweden. This plant riſes about ſix inches high, with an herbaceous ſwelling ſtalk; the leaves are produced in cluſters at the top, which are very hoary, waved on their edges, have obtuſe points, and ſet very cloſe to the ſtalk; the flowers are produced in ſlender ſpikes from the ſide of ſtalk; theſe are purple, but not ſo fragrant as many of the other ſorts; the pods are woolly, and recurve backward at the end.

All theſe ſorts flower in May and June, at which time they are the greateſt ornament to the flower-garden, therefore deſerve our care to cultivate them as much as any of the flowery tribe; but in order to have many double flowers, there muſt be great care taken in the choice of plants for ſeeds, without which there can be little hopes of having theſe flowers in perfection. The only ſure way of getting many double flowers, is to make choice of thoſe ſingle flowers which grow near many double ones; for I have always found thoſe ſeeds which have been ſaved from plants growing in beds cloſe to each other, where there happened to be many double flowers among them, have produced a much greater number of plants with double flowers, than thoſe which have been ſaved from plants of the ſame kinds, which grew ſingle in the borders of the flower-garden; ſo that there ſhould be a ſmall bed of each kind planted on purpoſe to ſave ſeeds in the flower-nurſery; or if they are ſown there, and the plants thinned properly when they are young, they need not be tranſplanted; for I have always obſerved the plants which have come up from ſcattered ſeeds, which have not been tranſplanted, endure the froſt much better than thoſe which have been removed; for as theſe plants ſend out horizontal roots from the bottom of their ſtems, which ſpread near the ſurface of the ground, ſo when they are tranſplanted, the roots are forced downward out of their natural direction; and if their ſtalks were grown tall before removal, they are generally planted low in the ground, whereby they are apt to rot, if the ground is moiſt, or the winter ſhould prove wet; therefore where they can be left unremoved, there will be a better chance of their living through the winter; and as theſe beds need not be of great extent, ſo when the winter proves very ſevere, it will not be much trouble or expence to arch the beds over with hoops, and cover them with mats in froſty weather, by which method they may be always preſerved.

The ground where theſe ſeeds are ſown, muſt not have any dung, for in rich land the plants will grow very vigorous in ſummer, but when the froſt comes on, or the heavy rains in autumn, either of which will ſoon deſtroy them; for theſe plants will thrive upon rocks or old walls, as was before obſerved; and in ſuch ſituations they will live, when all thoſe which are planted in gardens are deſtroyed. The beſt time to ſow the ſeeds is about the beginning of May; and if the ſeaſon ſhould prove dry, it will be proper to ſhade the beds with mats every day, to prevent the earth from drying too faſt; but the covering muſt be taken off every evening, to admit the dews of night, and they ſhould be gently watered in the evening two or three times a week. When the plants firſt appear, with their two ſeed-leaves, they are often attacked by flies, eſpecially in dry hot ſeaſons; therefore to prevent their deſtroying of the plants, the covering ſhould be continued over them during the heat of the day, and the plants frequently refreſhed with water, which will keep them in a growing ſtate, ſo the flies will not infeſt them; for I have always obſerved, they never attack any plants unleſs they have been ſtunted in their growth: when the plants have got ſtrength, they will be ſecure from this danger, and the coverings may be removed; after this the plants will require no farther care but to keep them clean from weeds, and to be thinned to the diſtance of nine inches or a foot aſunder, that they may have proper room to grow, and not draw each other up tall and weak. The plants which are drawn out of theſe beds to thin them, may be planted in the borders of the flower-garden, where they are deſigned to remain, and the ſooner they are removed, when the plants have got ſix or eight leaves, the more likely they will be to live through the winter; becauſe their roots will not have extended themſelves ſo far, ſo cannot be planted deep in the ground, and may take their natural direction; therefore whenever theſe plants are removed, it is always the beſt way to do it when they are young.

The farther care of the plants which are left in the beds, will be to cover them in winter with mats; and when they come to flower, all thoſe which are not of good colours, or whoſe flowers are ſmall, ſhould be drawn out as ſoon as they appear, that they may not impregnate thoſe which are deſigned for ſeeds with their farina; but thoſe with double flowers ſhould by no means be removed, nor ſhould their flowers be cut off, but ſuffered to fade among the ſingle ones, by which the ſeeds will be improved; it will alſo be a ſure method of preſerving each ſort in perfection, to have them ſeparate from each other, in diſtinct beds; though I think there is no danger of any of the ſpecies altering, by the mixture of their farina, but their colours are liable to be changed by it; ſo that in order to continue thoſe pure, they ſhould not ſtand too near each other.

The time for ſowing the ſeeds before-mentioned, muſt be underſtood to be for the ſorts which are biennial; for the annual, or ten Weeks Stock Gilliflower ſhould be for the firſt ſeaſon ſown in February, as was before directed; and to ſucceed theſe, there ſhould be another parcel ſown in March; and thoſe who are curious to continue theſe flowers late in the autumn, ſhould ſow a parcel of the ſeed the latter end of May; and if theſe laſt ſown plants are upon a warm border, where they may be covered, by placing glaſſes before them in winter, or covering them with mats, they may be continued in flower till Chriſtmas; and if ſome of the plants are potted, and put under a hot-bed frame in autumn, where they may enjoy the open air in mild weather, and be ſcreened from hard rains and froſt; by which method I have known theſe plants kept flowering all the winter, when the winters have not been very ſevere.

There are ſome who propagate the double Stock Gilliflowers by ſlips and cuttings, which will take root when properly managed; but the plants ſo raiſed are never ſo ſtrong as thoſe which come from ſeeds, and

their ſpikes of flowers are always very ſhort, and have not half the beauty; therefore it is not worth while to practiſe this method, unleſs for thoſe ſorts which cannot be obtained with any certainty from ſeed.

The eleventh ſort grows naturally in the ſouth of France, Spain, and Italy, near the ſea coaſt. This riſes near a foot high, with a ligneous ſtalk, dividing into many ſmall branches, garniſhed with narrow hoary leaves, which are entire, and rounded at their extremity; the flowers are produced in looſe ſpikes at the end of the branches, which are ſmaller than thoſe of either ſort before-mentioned, of a bright red at their firſt appearing, but fade to a purple before they fall off. The ſtalks, leaves, and the whole plant is very white, and by its woody ſtalks hath the appearance of a perennial plant, but it generally periſhes in autumn. The ſeeds of this ſort ſhould be ſown in autumn, upon a warm border, where the plants are deſigned to remain; when the plants come up, they will require no farther care but to keep them clean from weeds, and thin them where they come up too cloſe. Theſe autumnal plants will flower early in June, ſo will produce good ſeeds; but thoſe which are ſown in the ſpring will flower in July and Auguſt, ſo that from theſe there cannot be any certainty of having ripe ſeeds: however, by ſowing the ſeeds at two or three different ſeaſons, there may be a ſucceſſion of flowers continued for three or four months.

The twelfth ſort is commonly ſown in gardens, ſometimes as an edging for borders, but more generally in patches between taller growing flowers: it is titled ſometimes Dwarf annual Stock Gilliflower, and by others it hath the appellation of Virginia Stock Gilliflower. This ſeldom riſes more than ſix inches high, ſending out many branches from the root, which intermix and grow irregular; theſe are garniſhed with ſpear-ſhaped leaves, rounded at their ends, and ſit cloſe to the branches; the flowers come out in looſe ſpikes at the end of the branches, which are of a purple colour, compoſed of four petals in form of a croſs, and are ſucceeded by ſlender pods like thoſe of the other ſorts. If the ſeeds of this ſort are ſown in patches, at two or three different times, the firſt in autumn, the ſecond the latter end of March, and the third the end of April, or the beginning of May, in the borders of the flower-garden, they will make a variety, when intermixed with other low growing annual flowers, for three months.

The thirteenth ſort riſes near two feet high, ſending out many upright branches from the bottom, which are thinly garniſhed with ſpear-ſhaped leaves, the lower ones being a little indented; the flowers come out ſingle, at great diſtances from each other, toward the upper part of the branches; theſe are ſmall, of a purpliſh red colour, and ſoon fall away, being ſucceeded by long taper pods, with awl-ſhaped points. This is an annual plant, which may be treated in the ſame manner as the laſt mentioned ſort; but as it hath little beauty, it is not often cultivated in gardens.

The fourteenth ſort grows naturally on the ſea coaſts in Italy, Spain, and Portugal. This is alſo an annual plant, which branches out from the root into many declining ſtalks; the lower leaves are about two inches long, and three quarters of an inch broad, very deeply ſinuated on their edges, and hoary; thoſe upon the ſtalks are of the ſame form, but much ſmaller; the flowers are produced from the ſides of the ſtalks ſingly, and at the top in looſe ſpikes; the empalements of the flowers are covered with a white down, as are alſo the end of the branches; the flowers are purple, compoſed of four leaves placed in form of a croſs; the pods are about three inches long, taper, woolly, and at their ends are divided into three parts, which ſpread into a triangle. It flowers in July, and when the ſeaſon is favourable, the ſeeds will ripen in autumn; but if the ſeeds are ſown in autumn on a warm border, the plants will live through the winter, and theſe will flower early in June, ſo from theſe good ſeeds may be obtained from them.

The fifteenth ſort grows naturally on the ſea coaſts in the ſouth of France and Spain, where it continues three or four years; the ſtalk is erect, and the whole plant is covered with a white down; the lower leaves are broad, ſpear-ſhaped, obtuſe, and alternately indented; the flowers are fleſh-coloured, compoſed of four petals like the other ſpecies, and are ſucceeded by long woolly pods.

This may be propagated by ſeeds in the ſame manner as the other ſorts; and if the plants grow in rubbiſh, they will live through the winter better than in rich earth.

The ſixteenth ſort is of humble growth, ſeldom riſing above eight or nine inches high; the leaves are very narrow, and indented on their edges; the ſtalk becomes ſhrubby, to which the flowers grow very cloſe; theſe are of a worn out purple colour, ſo make but little appearance. It grows naturally in Spain and Italy, and is not ſo hardy as the other ſorts, therefore requires ſome protection in winter.

The ſeventeenth ſort grows naturally in Portugal. This is a low annual plant with pointed leaves, whoſe borders are indented as if torn; the empalement of the flower is hoary; the flowers have four purple petals placed in form of a croſs, which are ſucceeded by knobbed-pointed pods incloſing flat ſeeds.

If the ſeeds of this kind are ſown in the ſpring upon ſheltered borders, where the plants are to remain, and they are thinned and kept clean from weeds, the plants will flower in July, and produce ripe ſeeds in autumn.

CHELIDONIUM. Tourn. Inſt. R. H. 231. tab. 116. Lin. Gen. Plant. 572. Chelidonium majus. Raii Meth. Plant. 100. Glaucium. Tourn. Inſt. R. H. tab. 130. Celandine, or Greater Celandine, in French *Cheliodine* or *Eclair*.

The CHARACTERS are,

The flower hath a roundiſh empalement, compoſed of two concave obtuſe leaves, which fall off; it hath four large roundiſh petals, which ſpread open and are narrow at their baſe; in the center is ſituated a cylindrical germen, attended by a great number of ſtamina, which are broad at the top, and are terminated by oblong, compreſſed, twin ſummits. Upon the germen is ſituated a bifid ſtigma in form of a head. The germen afterward becomes a cylindrical pod, with one or two cells, opening with two valves, and filled with many ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flower having many ſtamina and one ſtyle. To this genus he has joined the Glaucium of Tournefort, whoſe characters very well agree with thoſe of Celandine, ſo are very properly brought together.

The SPECIES are,

1. CHELIDONIUM (*Majus*) pedunculis umbellatis. Lin. Gen. Plant. 505. *Celandine with an umbellated foot-ſtalk.* Chelidonium majus vulgare. C. B. P. 144. *Greater common Celandine.*
2. CHELIDONIUM (*Laciniatum*) foliis quinque lobatis, lobis anguſtis acute laciniatis. *Celandine whoſe leaves are compoſed of five narrow lobes, which are cut into many acute ſegments.* Chelidonium majus laciniato flore. Cluſ. Hiſt. 203. *Greater Celandine with a jagged flower.*
3. CHELIDONIUM (*Glaucium*) pedunculis unifloris, foliis amplexicaulibus ſinuatis, caule glabro. Lin. Sp. Plant. 506. *Celandine with ſingle flowers on the foot-ſtalks, ſinuated leaves which embrace the ſtalks, and a ſmooth ſtalk.* Glaucium flore luteo. Tourn. Inſt. R. H. 351. *Glaucium with a yellow flower*; and the Papaver corniculatum luteum. C. B. P. 171. *Yellow horned Poppy.*
4. CHELIDONIUM (*Corniculatum*) pedunculis unifloris, foliis ſeſſilibus pinnatifidis, caule hiſpido. Lin. Sp. Plant. 506. *Celandine with ſingle flowers upon the foot-ſtalks, leaves ſet cloſe to the ſtalks which have winged points, and a rough ſtalk.* Glaucium hirſutum flore Phœnicio. Tourn. Inſt. R. H. 253. *Hairy Glaucium, or horned Poppy, with a ſcarlet flower.*
5. CHELIDONIUM (*Glabrum*) pedunculis unifloris, foliis ſemiamplexicaulibus, dentatis, glabris. *Celandine with foot-*

foot-ſtalks having a ſingle flower, and ſmooth indented leaves, which half embrace the ſtalks. Glaucium glabrum flore Phœnicio. Tourn. Inſt. 254. *Smooth horned Poppy with a ſcarlet flower.*

6. CHELIDONIUM (*Hybridum*) pedunculis unifloris, foliis pinnatifidis, linearibus, caule lævi ſiliquis trivalvibus. Lin. Sp. Plant. 724. *Celandine with ſingle flowers upon the foot-ſtalk, many pointed narrow leaves, and a ſmooth ſtalk.* Glaucium flore violaceo. Tourn. Inſt. 254. *Horned Poppy with a Violet-coloured flower.*

The firſt ſort is the common Celandine which is uſed in medicine, and is eſteemed aperitive and cleanſing, opening obſtructions of the ſpleen and liver, and is of great uſe in curing the jaundice and ſcurvy. This grows naturally on the ſide of banks, and in ſhady lanes in many parts of England, ſo is ſeldom cultivated in gardens; for if the ſeeds are permitted to ſcatter, the ground will be plentifully ſtored with plants to a conſiderable diſtance. It flowers in May, at which time the herb is in the greateſt perfection for uſe.

The ſecond ſort is found growing in a few particular places, where the ſeeds have been formerly ſown, or the plants caſt out of gardens. This is by ſome ſuppoſed to be only a variety of the firſt, but I have propagated this by ſeeds above forty years, and have conſtantly found the plants produced to be the ſame as thoſe from which the ſeeds were ſaved, and never vary, nor have I ever obſerved the firſt alter to this. The leaves of this are divided into narrow long ſegments, which are deeply jagged on their edges, and the petals of the flower are cut into many parts, in which it differs from the firſt. If the ſeeds of this ſort are permitted to ſcatter, they will fill the ground with plants. They both delight in ſhade. There is a variety of this with double flowers, which generally riſes the ſame from ſeeds, which is not uſual in many other plants; however, this variety may always be preſerved by parting the roots.

The third ſort is known by the title of Horned Poppy; it was ſo called from the reſemblance which the flower bears to the Poppy, and the long ſeed-veſſel, which is like a horn. It grows naturally upon the ſandy and gravelly ſhores by the ſea, in many parts of England, from whence the ſeeds have been brought into gardens, where it is ſometimes allowed to have place for the ſake of variety. This plant abounds with a yellow juice which flows out from every part, when broken. It ſends out many thick gray leaves, which are deeply jagged; the ſtalks are ſtrong, ſmooth, and jointed, which riſe near two feet high, and divide into many branches. Theſe are garniſhed with leaves at each joint; thoſe on the lower part of the ſtalks are long, broad, and deeply jagged, but the upper leaves are entire and almoſt heart-ſhaped: they cloſely embrace the ſtalks with their baſe; from the boſom of the leaves come out the ſhort foot-ſtalks of the flowers, each ſupporting one large yellow flower, compoſed of four broad petals, which ſpread open like the garden Poppy, in the center of which are a great number of yellow ſtamina, ſurrounding a long cylindrical germen, crowned by an arrow-pointed ſtigma, which is permanent, remaining upon the top of the horned ſeed-veſſel, which grows nine or ten inches long, having a longitudinal furrow on one ſide, where it opens when ripe, and lets out the ſeeds. This is a biennial plant, which flowers the ſecond year, and periſhes ſoon after the ſeeds are ripe.

If the ſeeds of this plant are permitted to ſcatter, they will fill the ground near them with plants, ſo that it is not a proper plant for a flower-garden; but if a few of the ſeeds are ſcattered about in rock work, the plants will riſe without trouble, and in ſuch places will have a pretty effect. And if the ſeeds are permitted to ſcatter, there will always be a ſupply of young plants; ſo the only care they will require, is to pull them up when they multiply too faſt. It flowers in June and July, and the ſeeds ripen in autumn.

The fourth ſort grows naturally in Spain, Italy, and ſome parts of Germany, from whence the ſeeds have been brought to England. The leaves of it are deeply jagged and hairy, of a pale green, and grow cloſe to the ſtalks: thoſe at the bottom lie on the ground, and are broader than thoſe above. The ſtalks are a foot and a half high, having a ſingle jagged leaf placed at each joint; theſe have many diviſions, from their origin to the point, which is extended longer than the lower leaves. The flowers come out from the boſom of the leaves; theſe are compoſed of five broad obtuſe petals, which are of a dark ſcarlet colour, and ſoon fall off. In the center of each is ſituated an oblong germen, having no ſtyle, but ſupports a bifid ſtigma; this is attended by a great number of ſhort ſtamina, terminated by obtuſe ſummits. The germen afterward becomes a long taper pod, on the apex of which the bifid ſtigma remains, ſitting on the middle partition, which divides the pod into two cells, which are filled with ſmall ſeeds. The flower hath an empalement compoſed of two hollow leaves, which are cloſely ſet with ſhort prickles; this falls away when the flower is expanded. It flowers in June and July, and the ſeeds ripen in autumn. As the flowers of this plant are but of ſhort duration, they do not make any conſiderable figure; but the foliage of the plant is very elegant, and might be introduced by way of ornament to furniture with great advantage, being very pictureſque: it may alſo be wrought into patterns for ſilks, and painted upon porcelain, where it would have a very good effect. If the ſeeds of this plant are ſown in the autumn, they will more certainly grow than thoſe which are ſown in the ſpring; which frequently, in dry ſeaſons, do not come up the ſame year, or at leaſt not before autumn; whereas thoſe ſown in autumn, frequently come up ſoon after, or if not at that ſeaſon, do not fail coming up in the ſpring; and theſe plants come early to flower, ſo that good ſeeds may always be obtained from them. They ſhould be ſown where the plants are to remain, and they will require no other care but to thin them where they are too cloſe, and keep them clean from weeds.

The fifth ſort differs from the fourth, in having broader leaves, which are not ſo deeply divided; the whole plant is ſmooth, and the flowers are larger, but are of the ſame colour: this is alſo an annual plant, and requires the ſame treatment as the laſt.

The ſixth ſort grows naturally among the Corn, in ſome parts of England. This is alſo an annual plant, whoſe ſeeds ſhould be ſown in autumn, for thoſe which are ſown in the ſpring ſeldom ſucceed. The leaves of this ſort are finely jagged, and divided into narrow ſegments, ſomewhat like thoſe of Buckſhorn Plantain; they are ſmooth, of a lucid green, and are commonly oppoſite. The ſtalks riſe little more than a foot high, dividing into two or three branches upward, garniſhed with ſmall leaves of the ſame form as thoſe below. The flowers are ſuſtained by ſlender foot-ſtalks, which come out from the wings of the leaves; theſe are compoſed of four obtuſe petals, of a Violet colour, in the center of which is ſituated a cylindrical germen, attended by a great number of ſtamina; the germen afterward becomes a long cylindrical pod, like thoſe of the other ſpecies. The flowers of this plant are very fugacious, ſeldom laſting above three or four hours before the petals drop off, eſpecially in clear weather. It flowers in May, and the ſeeds ripen in July, and the plants ſoon after periſh. If the ſeeds are permitted to ſcatter, the plants will come up without care as the others.

CHELONE [χελώνη, *Gr.* a tortoiſe.] Tourn. Act. R. S. 1706. tab. 7. fol. 2. Lin. Gen. Plant. 666.

The CHARACTERS are,

The empalement of the flower is of one leaf, cut into five parts, and is permanent; the flower is of the ringent kind, having a ſhort cylindrical tube, which is ſwollen at the chaps, where it is oblong, convex above, and plain below; the mouth is almoſt cloſed; the upper lip is obtuſe and in-

dented, the lower lip is lightly cut into three parts. It hath four ſtamina, which are incloſed in the backſide of the petal, the two ſide ones being a little longer than the other, which are terminated by oval hairy ſummits. It hath an oval germen ſupporting a ſlender ſtyle, crowned by an obtuſe ſtigma; the germen afterward becomes an oval capſule having two cells, which are filled with flat roundiſh ſeeds having a border.

This genus of plants is ranged in the ſecond ſection of Linnæus's thirteenth claſs, intitled Didynamia Angioſpermia, from the flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. CHELONE (*Glabra*) foliis lanceolatis, acuminatis, ſeſſilibus, obſoletè ſerratis, radice reptatrice. *Chelone with pointed ſpear-ſhaped leaves, ſet cloſe to the ſtalks, with ſmall ſerratures on their edges, and a creeping root.* Chelone Acadienſis flore albo. Tourn. Act. R. Par. 1706. *Chelone of Acadia, with a white flower.*
2. CHELONE (*Purpurea*) foliis lanceolatis, obliquis, petiolatis, oppoſitis, marginibus acutè ſerratis. *Chelone with oblique ſpear-ſhaped leaves, growing oppoſite on foot-ſtalks, and their borders ſharply ſawed.* Chelone floribus ſpecioſis pulcherrimis, colore roſæ damaſcenæ. Clayt. Flor. Virg. 71. *Chelone with a very beautiful looking flower, the colour of the Damaſk Roſe.*
3. CHELONE (*Hirſuta*) caule foliiſque hirſutis. Lin. Sp. Plant. 611. *Chelone with hairy ſtalks and leaves.* Digitatis Virginiana, panacis coloni foliis, flore amplo, pallaſcente. Pluk. Mant. 64. *Virginia Foxglove with Clowns all-heal leaves, and a large pale flower.*

The firſt ſort grows naturally in moſt parts of North America. This is called by Joſcelin, in his New England Rarities, the Humming Bird-tree. It hath a pretty thick jointed root, which creeps under ground to a conſiderable diſtance, ſending up ſmooth channelled ſtalks, which riſe about two feet high, garniſhed with two leaves at each joint, ſtanding oppoſite without foot-ſtalks; theſe are three inches and a half long, and about three quarters of an inch broad at their baſe, where they are broadeſt, and diminiſh gradually to a ſharp point; they have ſmall ſerratures on their edges, which ſcarcely appear. The flowers grow in a cloſe ſpike at the end of the ſtalks; they are white, and have but one petal, which is tubular, and narrow at the bottom, but ſwells upward, almoſt like the Foxglove flower; the upper ſide is bent over and convex, but the under is flat, and ſlightly indented in three parts at the end. When the flowers fall off, the germen turns to an oval capſule ſitting in the empalement, filled with roundiſh compreſſed ſeeds, which have a thin border. It flowers in Auguſt, and when the autumn proves favourable, the ſeeds will ſometimes ripen in England; but as the plants propagate ſo faſt by their creeping roots, the ſeeds are ſeldom regarded. The beſt time to tranſplant the roots is in autumn, that they may be well eſtabliſhed in the ground before the ſpring, otherwiſe they will not flower ſo ſtrong, eſpecially if the ſeaſon proves dry; but when they are removed in the ſpring, it ſhould not be later than the middle of March, by which time their roots will begin to puſh out new fibres. They will thrive in almoſt any ſoil or ſituation, but their roots are apt to creep too far, if they are not confined, and ſometimes intermix with thoſe of other plants; and then their ſtalks ſtand ſo far diſtant from each other, as to make but little appearance; therefore they ſhould be planted in pots, which will confine their roots, ſo that in each pot there will be eight or ten ſtalks growing near each other, when they will make a tolerable good appearance. This plant is very hardy, ſo is not injured by cold, but it muſt have plenty of water in hot weather.

The ſecond ſort was diſcovered in Virginia by Mr. Clayton, who ſent it to England: the roots of this do not creep ſo far as thoſe of the firſt, the ſtalks are ſtronger, and the leaves much broader, and are oblique; they are deeply ſawed on their edges, and ſtand upon ſhort foot-ſtalks: the flowers are of a bright purple colour, ſo make a finer appearance. This flowers at the ſame time with the firſt, and is propagated by parting of the roots in the ſame manner.

The third ſort I received from New England, where it grows naturally: this is near to the firſt ſort, but the ſtalks and leaves are very hairy, and the flower is of a purer white. It flowers at the ſame time with the former, and requires the ſame treatment.

As theſe plants flower in the autumn, when there is a ſcarcity of other flowers, it renders them the more valuable, eſpecially the ſecond ſort, whoſe flowers make a very pretty appearance, when they are ſtrong; and if ſome of them have a ſhady ſituation in the ſummer, they will flower later in the autumn.

CHENOPODIA-MORUS. See BLITUM.

CHENOPODIUM [χηνοπόδιον, *Gr.*] Tourn. Inſt. R. H. 506. tab. 288. Lin. Gen. Plant. 272. Gooſefoot, or Wild Orach.

The CHARACTERS are,

It hath a permanent empalement, compoſed of five oval concave leaves: the flower hath no petal, but in the center it hath five ſtamina placed oppoſite to the leaves of the empalement, and of the ſame length, terminated by roundiſh twin ſummits; it hath a round germen ſupporting a ſhort double ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a five-cornered fruit incloſed in the empalement, containing one roundiſh depreſſed ſeed.

Linnæus places this genus in the ſecond ſection of his fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. CHENOPODIUM (*Bonus Henricus*) foliis triangulari-ſagittatis, integerrimis ſpicis compoſitis aphyllis. Hort. Cliff. 84. *Gooſefoot with arrow-ſhaped triangular leaves which are entire.* Chenopodium folio triangulo. Tourn. Inſt. 506. *Gooſefoot with a triangular leaf, called Engliſh Mercury, All Good, or Good Henry.*
2. CHENOPODIUM (*Vulvaria*) foliis integerrimis rhombeo-ovatis, floribus conglomeratis axillaribus. Flor. Suec. 216. *Gooſefoot with entire, oval, rhomboidal leaves, and flowers growing in cluſters on the ſide of the ſtalks.* Chenopodium fœtidum. Tourn. Inſt. 506. *Stinking Orach.*
3. CHENOPODIUM (*Scoparia*) foliis lineari-lanceolatis, planis, integerrimis. Hort. Cliff. 86. *Gooſefoot with narrow ſpear-ſhaped leaves, which are plain and entire.* Chenopodium lini folio villoſo. Tourn. Inſt. R. H. *Gooſefoot with a hairy Flax leaf, commonly called Belvedere, or Summer Cypreſs.*
4. CHENOPODIUM (*Botrys*) foliis oblongis, ſinuatis, racemis nudis multifidis. Hort. Cliff. 84. *Gooſefoot with oblong ſinuated leaves, and naked multifid ſpikes of flowers.* Chenopodium ambroſioides folio ſinuato. Tourn. Inſt. 506. *Gooſefoot, like Ambroſia, with ſinuated leaves, commonly called Oak of Jeruſalem.*
5. CHENOPODIUM (*Ambroſioides*) foliis lanceolatis, dentatis, racemis foliatis ſimplicibus. Hort. Cliff. 84. *Gooſefoot with ſpear-ſhaped indented leaves, and ſingle leafy ſpikes of flowers.* Chenopodium ambroſioides Mexicanum. Tourn. Inſt. 506. *Mexican Gooſefoot, like Ambroſia, commonly called Oak of Cappadocia.*
6. CHENOPODIUM (*Fruticoſum*) foliis lanceolatis, dentatis, caule fruticoſo. *Gooſefoot with ſpear-ſhaped indented leaves, and a ſhrubby ſtalk.* Chenopodium ambroſioides Mexicanum fruticoſum. Boerh. Ind. alt. 2. p. 90. *Shrubby Mexican Orach.*
7. CHENOPODIUM (*Multifidum*) foliis multifidis, ſegmentis linearibus, floribus axillaribus ſeſſilibus. Lin. Sp. 320. *Gooſefoot with multifid leaves, linear ſegments, and flowers ſet cloſe to the ſtalk.* Chenopodium ſempervirens, foliis tenuiter laciniatis. Hort. Elth. 78.

There are many other ſpecies of this genus, ſome of which grow naturally on dunghills and the ſide of ditches, in moſt parts of England, where they often become very troubleſome weeds; for which reaſon, I have not enumerated them here.

The firſt ſort is found growing naturally in ſhady lanes in many parts of England, but it is very doubtful if the ſeeds have not been caſt out of gardens originally,

originally, becauſe this plant was formerly cultivated in kitchen-gardens for uſe; and in ſome of the northern counties, the people ſtill preſerve it in their gardens as an eſculent herb; which in the ſpring ſeaſon, they dreſs in the ſame manner as Spinach, for which it is a ſubſtitute. But, as the latter is a much better herb, it has obtained the preference very juſtly, in all the countries where the culture of the kitchen-garden is underſtood.

The ſecond ſort is very common upon dunghills, and in gardens, in moſt parts of England: it is ſeldom cultivated, except in ſome phyſic-gardens; for the markets in London are ſupplied with it by the herb-women, who gather it in the places where it grows wild.

The third ſort is ſometimes cultivated in gardens; it is a beautiful plant, which is naturally diſpoſed to grow very cloſe and thick, and in as regular a pyramid as if cut by art. The leaves are of a pleaſant green; and were it not for that, it hath ſo much of the appearance of a Cyprus-tree, that at ſome diſtance it might be taken for the ſame, by good judges: the ſeeds ſhould be ſown in autumn; and in the ſpring, when the plants are come up, they may be planted into pots of good earth, and kept ſupplied with water in dry weather: theſe pots may be intermixed with other plants to adorn court-yards, &c. where they will appear very handſome, until their ſeeds begin to ſwell and grow heavy, which weigh down and diſplace the branches; at which time the pots ſhould be removed to ſome abject part of the garden, to perfect their ſeeds; which, if permitted to fall upon the ground, will come up the next ſpring; ſo that you need be at no more trouble in propagating theſe plants, but only to tranſplant them where you intend they ſhould grow.

The fifth ſort was formerly uſed in medicine; but although it ſtill continues in the catalogue of ſimples annexed to the London Diſpenſatory, yet is very ſeldom uſed at preſent. This plant may be propagated by ſowing the ſeeds in an open border of good earth in the ſpring, where it will perfect its ſeeds in autumn; which, if permitted to ſhed upon the ground, will ariſe as the former.

The fourth ſort was brought from America, where the ſeeds are called Worm Seed, I ſuppoſe from ſome quality contained in it, which deſtroys worms in the body.

This is propagated by ſowing the ſeeds in the ſpring, as the before-mentioned ſort, and will perfect its ſeed in autumn; after which, the plant decays to the ground: but if the root be preſerved in ſhelter under a common frame in winter, the ſtalks will riſe again the following ſpring.

The leaves of this plant emit a very ſtrong odour when bruiſed, ſomewhat like thoſe of the Ambroſia, for which the plants are preſerved in gardens, for the flower hath no beauty. This plant grows naturally in moſt parts of North America, where it is generally called Worm Seed. It ſends up ſeveral ſtalks from the root, which riſe about two feet high, garniſhed with oblong leaves a little indented on their edges, of a light green, and placed alternately on the ſtalks; the flowers come out from the wings of the leaves on the upper part of the branches, in looſe ſpikes: theſe appear in July, and the ſeeds ripen in September; which, if permitted to ſcatter, the plants will come up the following ſpring, when a few of them may be tranſplanted into pots filled with kitchen-garden earth, to be preſerved through the winter; and the others may be planted in the common borders, where they will flower and perfect their ſeeds; but unleſs the winter is very favourable, the roots will be deſtroyed.

The ſeeds of all the ſpecies of this genus will ſucceed beſt, if they are ſown in autumn; for when they are ſown in the ſpring, they frequently lie a whole year before the plants come up: therefore where the ſeeds of any of them ſcatter, the plants will come up much better than thoſe which are ſown by hand.

The fifth ſort is annual: this alſo grows naturally in North America, from whence I have frequently received the ſeeds. It is alſo a native of many of the warm countries in Europe. This hath many oblong leaves at the bottom, which are deeply ſinuated on both ſides, ſomewhat like thoſe of the Oak-tree, from whence it received the title of Oak of Jeruſalem. Theſe are purple on their under ſide, and when bruiſed, emit a ſtrong odour. The ſtalks riſe about eight or nine inches high, dividing into ſeveral ſmaller branches. The lower part of theſe is garniſhed with leaves of the ſame ſhape with thoſe below, but are ſmaller. The flowers grow in naked looſe ſpikes, divided into many parts: they are ſmall, herbaceous, and are ſucceeded by ſmall round ſeeds. This ſort flowers in June and July, and the ſeeds ripen in autumn.

The ſixth ſort hath leaves very like thoſe of the fourth, and have the ſame ſcent: but this hath a ſhrubby ſtalk, which riſes five or ſix feet high, and divides into many branches. It is a native of America, and muſt be houſed in the winter, for it will not live through the winter in England in the open air. It is eaſily propagated by cuttings during any of the ſummer months, which, if planted in a ſhady border, and duly watered, will ſoon take root; and then may be planted in pots filled with light earth, and placed in the ſhade till they have taken new root, after which they may be placed with other hardy exotic plants in a ſheltered ſituation during ſummer; and when the froſt comes on, they muſt be removed into the green-houſe; but they only require protection from hard froſts, and ſhould have plenty of air in mild weather. This grows naturally in the Braſils.

The ſeventh ſort grows naturally at Buenos Ayres: this riſes with a ſhrubby ſtalk three or four feet high, garniſhed with oblong leaves, which are cut into many linear ſegments; the flowers ſit cloſe to the ſtalks, which, like the other ſpecies of this genus, have no petals, but the empalement incloſes five ſlender ſtamina: the germen ſupports two ſtyles, crowned by obtuſe ſtigma.

This is a perennial plant, which retains its leaves through the year, ſo will add to the variety in a green-houſe in winter, but has little other beauty to recommend it. This may be propagated by cuttings, which, if planted in a bed of light earth during any of the ſummer months, and duly ſhaded and watered, will put out roots; then they may be tranſplanted into pots, and may be placed with other hardy exotic plants in ſummer, but muſt be ſheltered from froſt in winter.

CHERRY-LAUREL. See PADUS.

CHERRY-TREE. See CERASUS.

CHERVIL. See SCANDIX.

CHESNUT. See CASTANEA.

CHESNUT, the Horſe. See ESCULUS.

CHIONANTHUS. Lin. Gen. Plant. 21. The Fringe, or Snowdrop-tree. This title was given to this plant by Dr. Van Royen, from the whiteneſs of its flowers: the inhabitants of America, where this tree is a native, call it Snowdrop-tree, for the ſame reaſon: and the Dutch call it Sneebaum, i. e. Snow-tree, on the ſame account.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is erect, and cut into four acute parts; the flower is of one petal, having a ſhort ſpreading tube the length of the empalement, and the upper part is cut into four very long narrow ſegments, which are erect. It hath two ſhort ſtamina inſerted in the tube of the petal, which are terminated by upright heart-ſhaped ſummits. In the center is placed the oval germen, ſupporting a ſingle ſtyle, crowned by an obtuſe trifid ſtigma. The germen afterward becomes a round berry with one cell, incloſing one hard ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's ſecond claſs, intitled Diandria Monogynia, the flower having two ſtamina and one ſtyle.

We

We have but one SPECIES of this plant in the Engliſh gardens, viz.

CHIONANTHUS pedunculis trifidis trifloris. Lin. Sp. Plant. 8. *Snowdrop-tree, or Fringe-tree, with trifid foot-ſtalks ſupporting three flowers.* Amelanchier Virginiana lauroceraſi folio. Pet. Hor. Sicc. 241. *Virginia Amelanchier with a Laurel leaf.*

This ſhrub is common in South Carolina, where it grows by the ſide of rivulets, and ſeldom is more than ten feet high: the leaves are as large as thoſe of the Laurel, but are of a much thinner ſubſtance; the flowers come out in May, hanging in long bunches, and are of a pure white, from whence the inhabitants call it Snowdrop-tree; and, from the flowers being cut into narrow ſegments, they give it the name of Fringe-tree. After the flowers have fallen away, the fruit appears, which becomes a black berry, about the ſize of Sloes, having one hard ſeed in each.

This tree is now more common in the curious gardens in England, than it was a few years ſince; there having been many young plants raiſed from the ſeeds, which have been brought from America lately: there have alſo been ſome plants propagated by layers, though there is great uncertainty of their taking root, which they ſeldom do in leſs than two years; nor will they ever take root, unleſs they are well ſupplied with water in dry weather.

The beſt way to obtain good plants, is from the ſeeds, which muſt be procured from America, for they never have produced any fruit in this country. The ſeeds ſhould be ſown in ſmall pots filled with freſh loamy earth ſoon after they arrive, and ſhould be placed under a hot-bed frame, where they may remain till the beginning of May, when they muſt be removed to a ſituation expoſed to the morning ſun, and ſcreened from the ſun in the middle of the day. In dry weather the pots muſt be watered, and kept clean from weeds; for as theſe ſeeds lie in the ground a whole year before the plants will come up, they ſhould not be expoſed to the ſun the firſt ſummer, but the following autumn they ſhould be removed, and placed under a frame, to protect the ſeeds from being injured by the froſt; and if the pots are plunged into a moderate hot-bed the beginning of March, it will bring up the plants much ſooner than they will otherwiſe riſe; by which means they will get more ſtrength the firſt ſummer, and be better able to reſiſt the cold of the next winter. While theſe plants are very young, they will be in danger of ſuffering by ſevere froſt; but when they have obtained ſtrength, they will reſiſt the greateſt cold of our climate in the open air; therefore for the two or three firſt winters, it will be proper to keep them under ſhelter; ſo that the young plants may remain in the ſeed-pots all the firſt ſummer, and the following winter; and in the ſpring before they begin to ſhoot, they ſhould be ſhaken out of the pots, and carefully ſeparated ſo as not to break off their roots, and each planted in a ſmall pot filled with light loamy ſoil, and plunged into a very moderate hot-bed, juſt to forward their taking freſh root; then they ſhould be gradually inured to the open air, and during the following ſummer, the pots ſhould be plunged into the ground, to prevent the earth from drying, in a ſituation where they may enjoy the morning ſun, but ſcreened from the great heat at noon. During the ſummer ſeaſon, they will require to be frequently watered, and kept clean from weeds. The autumn following, they ſhould be again placed under a hot-bed frame to ſcreen them from froſt; but they ſhould enjoy the free air at all times, when the weather is mild. The April following, the plants may be ſhaken out of the pots, with the ball of earth to their roots, and planted where they are deſigned to remain.

This ſhrub delights in a moiſt, ſoft, loamy ſoil, and if it is planted in a ſheltered ſituation, will endure the cold of our winters very well in the open air; but in dry land it is very ſubject to decay in warm ſeaſons.

In the places where this ſhrub grows naturally, it produces great quantities of flowers, ſo that they ſeem covered with ſnow, which gave occaſion to the inhabitants for titling it Snowdrop-tree; but in England the flowers are ſeldom ſo numerous, ſo do not make ſo good an appearance.

CHIRONIA. Lin. Gen. Plant. 227.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five oblong ſegments: it hath one petal, with a roundiſh tube the ſize of the empalement, divided into five equal parts above, which ſpread open: it hath five ſhort broad ſtamina, which are faſtened to the top of the tube, and are terminated by large oblong ſummits, which join together, and after the flowers drop are ſpirally twiſted. It hath an oval germen, ſituated in the center, ſupporting a ſlender declining ſtyle, crowned by a riſing ſtigma in form of a head. The germen afterward becomes an oval capſule with two cells, filled with ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CHIRONIA fruteſcens, capſulifera. Lin. Sp. Plant. 190. *Shrubby Chironia bearing capſules.* Centaurium minus Africanum, arboreſcens, latifolium, flore ruberrimo. Com. Rar. Pl. 8. tab. 8. *Leſſer Tree-like African Centaury, with a broad leaf, and a very red flower.*
2. CHIRONIA fruteſcens baccifera. Lin. Sp. Plant. 190. *Shrubby berry-bearing Chironia.* Centaurium minus arboreſcens pulpiferum. Com. Rar. Pl. 9. tab. 9. *Leſſer Tree-like Centaury with ſeeds ſurrounded with pulp.*

Theſe plants grow naturally at the Cape of Good Hope, from whence their ſeeds were brought to Holland many years paſt, and the plants were raiſed in ſome of the curious gardens there, and have ſince been communicated to the curious in many parts of Europe. The ſeeds of the firſt ſort were ſent me from Paris, by Mr. Richard, gardener to the king at Verſailles, from which I raiſed ſeveral plants, which have flowered in the Chelſea garden ſeveral years, but have not as yet perfected any ſeeds.

It hath a fibrous root, which ſpreads near the ſurface of the ground. The ſtalks are round, and inclining to be ligneous, but are of a very ſoft texture; theſe grow from two to three feet high, having ſeveral branches on every ſide, which grow erect, garniſhed with ſucculent leaves, which are an inch or more in length, and an eighth part of an inch broad, ending in an obtuſe point. At the ends of each ſhoot the flowers are produced, which are tubulous, and ſpread open at the top like thoſe of Periwinkle; theſe are of a bright red colour, and when there are a large number of the flowers open on the ſame plant, they make a very fine appearance. In the center of the flower is placed an oval germen, upon which there is fixed a recurved ſtyle, having a blunt ſtigma at the top, ſurrounded by five incurved ſtamina, each ſupporting a large ſummit. When the flowers fall away, the germen becomes an inflated capſule, which is filled with ſmall ſeeds. The flowers are produced from June to autumn, and the ſeeds ripen in October. This plant ſhould be placed in an airy glaſs-caſe in winter, where it may enjoy a dry air and much ſun, but will not thrive in a warm ſtove; nor can it be well preſerved in a common green-houſe, becauſe a damp moiſt air will ſoon cauſe it to rot.

The ſeeds of this plant ſhould be ſown in ſmall pots filled with light ſandy earth, ſoon after they are ripe, and plunged into a moderate hot-bed, and muſt be frequently but gently watered; ſometimes the ſeeds will lie a long time in the ground, ſo that if the plants do not appear the ſame ſeaſon, the pots ſhould not be diſturbed, but preſerved in ſhelter till the following ſpring, and then plunged into a freſh hot-bed, which will bring up the plants in a ſhort time, if the ſeeds are good. When the plants are fit to remove, they ſhould be tranſplanted into

ſmall pots, four or five in each pot; then plunge the pots into a moderate hot-bed, and ſprinkle them with water, and ſhade them every day from the ſun till they have taken new root; after which they muſt have a large ſhare of air in warm weather, to prevent their drawing up weak: when the plants have obtained ſome ſtrength, they muſt be gradually inured to bear the open air; but when they are expoſed abroad, if there ſhould happen much rain, the plants muſt be ſcreened from it, otherwiſe it will cauſe them to rot: when the plants have filled the pots with their roots, they ſhould be parted, and each put into a ſeparate pot filled with light ſandy earth, not rich with dung, placing them in the ſhade till they have taken freſh root; then they may be removed to a warm ſheltered ſituation, and mixed with ſuch other plants as require but little water; in which ſituation they may remain till autumn, when they muſt be placed in a dry airy glaſs-caſe; and in the winter ſhould have very little wet, but muſt enjoy the ſun as much as poſſible; and in mild weather ſhould have freſh air admitted to them, but muſt be protected from froſt: with this management, the plants will thrive and produce flowers the ſecond year from ſeed.

The ſecond ſort riſes with a firmer ſtalk than the firſt, which is round, jointed, and divides upward into a greater number of branches, garniſhed with ſhort narrow leaves, which are pretty thick and ſucculent. The flowers are produced at the end of the branches, in the ſame manner as thoſe of the firſt, which are of a fine red colour, but not half ſo large as the flowers of the firſt; when theſe fall away, they are ſucceeded by oval pulpy berries, in which are included many ſmall ſeeds. This ſort continues flowering great part of ſummer and autumn, and in warm ſeaſons the ſeeds will ripen in England.

It is propagated by ſeeds in the ſame manner as the former ſort, and the plants require the ſame treatment.

CHIVES, as they are by ſome titled, are the ſtamina, which ſupport the ſummits in the center of flowers.

CHIVETS, in French, are the ſmall parts, or little offsets from the roots of bulbous plants, by which they are propagated.

CHONDRILLA. Lin. Gen. Plant. 815. Tourn. Inſt. R. H. 475. tab. 268. [of Χόνδρος, *Gr.* a cartilage.] Gum Succory.

The CHARACTERS are,

The common empalement is compoſed of many narrow cylindrical ſcales, which are equal. The flower is compoſed of many hermaphrodite florets, which are uniform, and lie imbricatim, like tiles on a houſe; theſe have one petal, which is ſtretched out on one ſide like a tongue, and are indented at the top in four or five ſegments; they have each five ſhort hairy ſtamina, terminated by cylindrical ſummits. The germen is ſituated under the floret, having a ſtyle the length of the ſtamina, crowned by two reflexed ſtigmas; the germen afterward becomes a ſingle, oval, compreſſed ſeed, crowned with a ſingle down, and incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis. The flowers of this ſection are compoſed of only hermaphrodite florets, which are fruitful.

We have but one SPECIES of this genus, viz.

CHONDRILLA (*Juncea.*) Lin. Hort. Cliff. 383. *Gum Succory.* Chondrilla juncea viſcoſa arvenſis. C. B. P. 30. *Viſcous Field Gum Succory with ruſhy ſtalks.*

This plant grows naturally in Germany, Helvetia, and France, on the borders of the fields, and is ſeldom preſerved in gardens, becauſe the roots are very apt to ſpread, and become troubleſome weeds; and the ſeeds having down on their tops, are carried by the wind to a great diſtance, ſo that the neighbouring ground is filled with the plants; the roots of this ſtrike deep into the ground, and ſpread out with thick fibres on every ſide, each of which, when cut, or broken into many parts, will ſhoot up a plant; ſo that when this plant hath obtained poſſeſſion of the ground, it is very difficult to root out. The root ſends out a great number of ſlender ſtalks, which at their bottom are garniſhed with oblong ſinuated leaves, but thoſe above are very narrow and entire. The flowers are produced from the ſide and top of the branches, which are like thoſe of Lettuce, and are ſucceeded by ſeeds of the ſame form, crowned with down. It flowers in July, and the ſeeds ripen in September.

The other ſpecies of this genus which were enumerated in the former edition, are referred to the Lactuca and Crepis.

CHRISTMAS FLOWER, or Black Hellebore. See HELLEBORUS.

CHRISTOPHORIANA. See ACTEA.

CHRISANTHEMOIDES OSTEOSPERMON. See OSTEOSPERMUM.

CHRYSANTHEMUM. Tourn. Inſt. R. H. 491. tab. 280. Lin. Gen. Plant. 866. Leucanthemum. Tourn. Inſt. R. H. 492. [χρυσάνθεμον, *Gr.* from χρυσος, gold, ἄνθεμος, a flower; that is to ſay, Golden Flower.] Corn Marigold.

The CHARACTERS are,

It hath a compound flower, the rays being compoſed of female florets, which are extended on one ſide like a tongue, and are indented in three ſegments at the end; theſe have an oval germen, ſupporting a ſlender ſtyle, crowned by two obtuſe ſtigmas. The hermaphrodite florets which compoſe the diſk, are funnel-ſhaped the length of the empalement, but are divided into five ſegments at the top, which are ſpread open; theſe have five ſhort hairy ſtamina, terminated by tubular cylindrical ſummits, and have an oval germen, with ſtyle and ſtigma like the female; the germen afterward becomes a ſingle, oblong, naked ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua. In this ſection all the central florets which compoſe the diſk, are hermaphrodite and fruitful, and the rays are compoſed of female florets.

The SPECIES are,

1. CHRYSANTHEMUM (*Segetum*) foliis amplexicaulibus, ſupernè laciniatis, infernè dentato-ſerratis. Hort. Cliff. 416. *Corn Marigold with leaves embracing the ſtalks, the upper being jagged, and the lower indented like a ſaw.* Chryſanthemum ſegetum. Cluſ. Hiſt. 1. p. 334. *Corn Marigold.*
2. CHRYSANTHEMUM (*Leucanthemum*) foliis amplexicaulibus, oblongis, ſupernè ſerratis, infernè dentatis. Hort. Cliff. 416. *Corn Marigold with oblong leaves embracing the ſtalks, the upper ones being ſawed, and the lower indented.* Bellis ſylveſtris caule folioſo major. C. B. P. 261. *Greater wild Daiſy with a leafy ſtalk.*
3. CHRYSANTHEMUM (*Serotinum*) foliis lanceolatis, ſupernè ſerratis, utrinque acuminatis. Hort. Cliff. 416. *Corn Marigold with ſpear-ſhaped leaves, thoſe above being ſawed, and pointed on all ſides.* Bellis major, radice repente, foliis latioribus, ſerratis. Mor. Hiſt. 3. p. 29. *Greater Daiſy with a creeping root, and broad ſawed leaves.*
4. CHRYSANTHEMUM (*Montanum*) foliis imis ſpathulato-lanceolatis, ſerratis, ſummis linearibus. Sauv. Monſp. 87. *Corn Marigold with lower leaves pointed like a ſpear-ſhaped ſpatula, and ſawed, and the upper ones linear.* Leucanthemum montanum minus. Tourn. Inſt. 492. *Leſſer Mountain Ox-eye.*
5. CHRYSANTHEMUM (*Graminifolium*) foliis linearibus, ſubintegerrimis. Sauv. Monſp. 87. *Corn Marigold with narrow leaves, which are entire.* Leucanthemum gramineo folio. Tourn. Inſt. 493. *Ox-eye with a Graſs leaf.*
6. CHRYSANTHEMUM (*Alpinum*) foliis pinnatifidis, laciniis parallelis, integris, caule unifloris. Lin. Sp. Plant. 889. *Corn Marigold with many pointed leaves, whoſe ſegments are parallel and entire, and one flower on each foot-ſtalk.* Leucanthemum Alpinum, foliis Coronopi. Tourn. Inſt. R. H. 493. *Alpine Ox-eye with a Hartſhorn leaf.*

7. CHRYSANTHEMUM (*Corymbiferum*) foliis pinnatis, inciſo-ſerratis, caule multifloro. Prod. Leyd. 174. *Corn Marigold with winged leaves, ſawed ſegments, and many flowers upon a ſtalk.* Tanacetum montanum inodorum, minore flore. C. B. P. 132. *Unſavoury Mountain Tanſy with a leſſer flower.*
8. CHRYSANTHEMUM (*Coronarium*) foliis pinnatifidis, inciſis, extrorſum latioribus. Hort. Cliff. 416. *Corn Marigold with wing-pointed cut leaves, whoſe exterior parts are broadeſt.* Chryſanthemum Creticum. Cluſ. Hiſt. 1. p. 334. *Corn Marigold of Crete.*
9. CHRYSANTHEMUM (*Monſpelienſium*) foliis imis palmatis, foliolis linearibus, pinnatifidis. Sauv. Monſp. 304. *Corn Marigold, whoſe lower leaves are palmated, and the ſmaller linear, ending in many points.* Leucanthemum montanum foliis Chryſanthemi. Tourn. Inſt. 492. *Mountain Ox-eye with Corn Marigold leaves.*
10. CHRYSANTHEMUM (*Fruteſcens*) fruticoſum, foliis linearibus dentato-trifidis. Hort. Cliff. 417. *Shrubby Corn Marigold with narrow leaves, having three indented points.* Leucanthemum Canarienſe, foliis Chryſanthemi, Pyrethri ſapore. Tourn. Inſt. 493. *Canary Ox-eye with Corn Marigold leaves, and the taſte of Pelitory.*
11. CHRYSANTHEMUM (*Floſculoſum*) floſculis omnibus uniformibus, hermaphroditis. Hort. Cliff. 417. *Corn Marigold, whoſe florets are all uniform and hermaphrodite.* Bellis ſpinoſa, foliis Agerati. C. B. P. 262. *Prickly Daiſy with Maudlin leaves.*
12. CHRYSANTHEMUM (*Pallidum*) foliis linearibus, infernè apice dentatis, ſupernè integerrimis, pedunculis nudis unifloris. *Corn Marigold with narrow leaves, thoſe on the lower part being indented at their points, the upper entire, and naked foot-ſtalks with one flower.* Chryſanthemum pallidum minimis, imiſque, foliis inciſis ſuperioribus integris, capillaribus. Barrel. Icon. 421. *Leaſt Corn Marigold, with the under and leſſer leaves divided, the upper entire.*

The firſt ſort is the common Corn Marigold, which grows naturally amongſt the corn, and the borders of the corn-fields in divers parts of England, ſo is rarely admitted into gardens; but we have inſerted this and the next to introduce the other ſpecies.

The ſecond ſort is the greater Daiſy, which ſtands in the liſt of medicinal plants in the College Diſpenſatory: this grows naturally in moiſt paſtures, almoſt every where in this country. It riſes with ſtalks near two feet high, garniſhed with oblong indented leaves, which embrace the ſtalks with their baſe. The foot-ſtalks are each terminated by one white flower, ſhaped like thoſe of the Daiſy, but four times as large. It flowers in June.

The third ſort grows naturally in North America, but hath been long preſerved in the Engliſh gardens. The roots of this plant creep far under the ſurface, and ſend up ſtrong ſtalks three or four feet high, garniſhed with long ſawed leaves, ending in points; the ſtalks divide upward into many ſmaller, each being terminated by a large, white, radiated flower; theſe appear in September. It multiplies very faſt by its creeping roots, and will thrive in any ſoil or ſituation.

The fourth ſort grows naturally upon the Alps, and other mountainous places. I received this from Verona, near which place it grows in plenty: this ſends up a ſingle ſtalk a foot high, garniſhed with entire leaves above, but the under leaves are ſawed on the edges. The ſtalk is terminated by one large white flower, ſhaped like thoſe of the third ſort. It flowers in June, and the ſeeds ripen in Auguſt. This ſort may be propagated by ſeeds, which, if ſown in a ſhady border, will come up in about ſix weeks; and the plants, when fit to remove, may be tranſplanted into a ſhady border, where they are to remain, and will require no other care but to keep them clean from weeds.

The fifth ſort grows naturally about Montpelier; this hath a perennial root, from which ſprings up many narrow Graſs-like leaves, and, between them, ſtalks which riſe a foot and a half high, garniſhed with leaves of the ſame form as thoſe below. The ſtalks are each terminated by one large white flower, with a yellow diſk or middle. This flowers in June, but rarely perfects ſeeds in England, ſo is propagated only by parting the roots: the beſt time for this is in autumn, that the plants may get good root before winter.

The ſeventh ſort grows naturally on the Alps, and other mountainous places in Germany: this ſends out upright ſtalks, garniſhed with leaves cut into many parallel ſegments, ſomewhat like thoſe of Buckſhorn Plantain. The ſtalks riſe a foot and a half high, and are each terminated by a ſingle flower of the ſame form with thoſe of the laſt: it hath a perennial root, and may be propagated in the ſame manner as the other.

The eighth ſort has been many years cultivated in the gardens for the beauty of its flowers. Of this there are ſingle and double with white, and the ſame with yellow flowers; and as theſe do not differ from each other in any thing except in the colour of their flowers, therefore they are generally eſteemed but one ſpecies; but this difference is conſtant, for I have never found the ſeeds ſaved from the white, produce plants with yellow flowers, nor thoſe of the yellow produce white.

There is alſo a variety of theſe colours with fiſtular florets, which has accidentally riſen from ſeeds of the other; theſe are generally titled Quill-leaved Chryſanthemum; but as the ſeeds ſaved from theſe degenerate to the common ſorts, ſo they do not merit a particular denomination.

Theſe plants are always eſteemed as annual, ſo the ſeeds are uſually ſown upon a ſlender hot-bed in the ſpring, and the plants treated in the ſame manner as the African Marigold, for the culture of which we ſhall refer the reader to that article; but as the plants which riſe from ſeeds, do many of them produce ſingle flowers, although the ſeeds are ſaved from the beſt double flowers, therefore many perſons now propagate theſe plants from cuttings, whereby they continue the double ſorts only; theſe cuttings, taken from the plants the beginning of September, and planted in pots, will readily take root; and if they are placed under a hot-bed frame to ſcreen them from the froſt in winter, letting them have free air in mild weather, they will live through the winter; and in the ſpring theſe plants may be tranſplanted into the borders of the flower-garden, where they will flower in June, and continue in ſucceſſion till the froſt puts a ſtop to them; by this method all the varieties may be continued without variation, but the plants which are propagated this way by cuttings will become barren ſoon, ſo will not produce ſeeds.

The ninth ſort is a perennial plant, ſending out many ſtalks from the root, which divide into branches, garniſhed with pretty thick leaves, deeply cut into many ſegments, like thoſe of the laſt ſort; theſe are of a pale green; the flowers are produced at the end of the branches, ſtanding upon pretty long naked foot-ſtalks; they are very like thoſe of the common Greater Daiſy, in ſize and colour. It flowers in June, and continues till the end of September. This ſort ripens ſeeds every year in England, by which the plant is eaſily propagated; for if the ſeeds are ſown in the ſpring on a common border, the plants will come up in ſix weeks; when theſe are fit to remove, they may be tranſplanted into a nurſery-bed at about a foot diſtance every way, and kept clean from weeds till autumn, when they may be removed to the places where they are deſigned to remain. As theſe plants extend their branches pretty far on every ſide, they ſhould be allowed at leaſt two feet room; therefore they are not very proper furniture for ſmall gardens, where there is not room for theſe large growing plants; but in large gardens, theſe may have a place for the ſake of variety.

If theſe plants are planted in poor dry land, or upon lime-rubbiſh, they will not grow ſo vigorous as in good ground, ſo they will endure the cold better,

and

and continue longer; for when their leaves and branches are replete with moiſture, they are very apt to rot in the winter, ſo are ſeldom of long duration; but where the plants have grown from the joints of old walls, I have known them continue in vigour ſeveral years.

The tenth ſort grows naturally in the Canary Iſlands, from whence it was firſt brought to England, where it has been long an inhabitant in ſome curious gardens. It has been frequently called by the gardeners Pellitory of Spain, from the very warm taſte which it hath, much reſembling the taſte of that plant.

This riſes with a ſhrubby ſtalk near two feet high, dividing into many branches, garniſhed with pretty thick ſucculent leaves, of a grayiſh colour, cut into many narrow ſegments, which are divided into three parts at their extremity. The flowers come out from the wings of the leaves, ſtanding upon naked foot-ſtalks ſingly, which greatly reſemble thoſe of the common Chamomile; there is a ſucceſſion of flowers upon the ſame plants great part of the year, for which it is chiefly eſteemed. This plant will perfect ſeeds in England, when the ſeaſons are favourable; but as the cuttings of it take root ſo eaſily, if planted during any of the ſummer months, the ſeeds are rarely ſown.

As this plant is a native of warm countries, it will not live in the open air in England during the winter ſeaſon; therefore when the cuttings have made good roots, they ſhould be each planted into a ſeparate pot, and placed in the ſhade till they have taken freſh root; then they may be removed to a ſheltered ſituation, where they may remain till autumn, at which time they muſt be removed into the green-houſe to protect them from froſt; but in mild weather they ſhould have plenty of free air, and, during the winter, they ſhould be frequently refreſhed with water, but it muſt not be given them in too great plenty. In ſummer they will require more moiſture, and ſhould be treated in the ſame manner as other hardier kinds of exotic plants.

The eleventh ſort grows naturally at the Cape of Good Hope, from whence the ſeeds were brought many years paſt to Holland, where the plants were firſt raiſed, and from thence all the other parts of Europe have been ſupplied with this plant. It riſes with a ſhrubby ſtalk about two feet high, which divides into many ſlender branches upward, garniſhed with oblong leaves, much indented on their edges, each indenture terminating in a ſoft ſpine; theſe are of a pale green, ſet cloſe to the branches. The flowers are produced on ſhort foot-ſtalks from the wings of the leaves, toward the upper part of the branches; theſe are globular, and formed of a great number of hermaphrodite florets, which are tubular and even, having no rays, ſo are naked, and of a deep yellow colour. The flowers appear in June, and continue in ſucceſſion till the froſt ſtops them. This may be propagated by cuttings in the ſame manner as the laſt, and the plants ſhould be treated in the ſame way.

The twelfth ſort grows naturally about Madrid: this hath a low ſhrubby ſtalk, which ſeldom riſes a foot high, putting out ſeveral ſlender ligneous branches, garniſhed with narrow, pale, green leaves; thoſe on the lower part of the branches are indented at their extremity in ſeveral parts, but the upper leaves are entire; from the end of each branch is produced a naked foot-ſtalk ſix inches long, ſuſtaining one radiated flower, of a ſulphur colour. The flowers come out in June and July, but there is ſeldom any ſeeds ripened in England; this ſort muſt be ſheltered under a common frame in winter, for unleſs the winter proves very favourable, the plants will not live in the open air here. It may be propagated by cuttings in ſummer, as the two laſt ſorts, but theſe cuttings do not ſo readily take root as thoſe do.

CHRYSOBALANUS. Lin. Gen. Plant. 585. Icaco. Plum. Nov. Gen. 44. Cocoa Plumb.

The CHARACTERS are,

The empalement of the flower is of one leaf, divided into five parts, almoſt to the middle. The flower hath five petals, which ſpread open, and ten ſtamina, five of which are longer than the petals; the other are ſhorter, and are terminated by heart-ſhaped ſummits. In the center is ſituated an oval germen, ſupporting a trifid ſhort ſtyle, crowned by obtuſe ſtigmas. The germen afterward becomes an oval fleſhy berry, incloſing a nut with five longitudinal furrows.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia; but it would be more properly placed in the third ſection of his tenth claſs, for the flowers have ten ſtamina and three ſtyles.

The SPECIES are,

1. CHRYSOBALANUS (*Icaco*) foliis ovatis, emarginatis, floribus racemoſis, caule fruticoſo. *Chryſobalanus with oval indented leaves, flowers growing in bunches, and a ſhrubby ſtalk.* Frutex Cotini ferè folio craſſo, in ſummitate deliquium patiente, fructu ovali cæruleo oſſiculum anguloſum continente. Cateſb. Car. *The Cocoa Plumb.*

2. CHRYSOBALANUS (*Purpurea*) foliis decompoſitis, foliolis ovatis integerrimis. *Chryſobalanus with decompounded leaves, whoſe lobes are oval and entire.* Icaco fructu purpureo. Plum. Nov. Gen. 44. *Icaco with purple fruit.*

The firſt ſort grows naturally in the Bahama Iſlands, and in many other parts of America, but commonly near the ſea. It riſes with a ſhrubby ſtalk about eight or ten feet high, ſending out ſeveral ſide branches, covered with a dark brown bark, ſpotted with white; theſe are garniſhed with oval ſtiff leaves, which are indented at the end, in form of a heart, placed alternately on the branches. From the wings of the leaves, and alſo at the diviſion of the branches, the flowers are produced, which grow in looſe bunches; theſe are ſmall and white, having many ſtamina in each, which are joined to the petals of the flowers, terminated by yellow ſummits. The flowers are ſucceeded by oval Plumbs about the ſize of Damſons; ſome of theſe are blue, ſome red, and others yellow; they have a ſweet luſcious taſte. The Spaniards in the iſland of Cuba, make a conſerve of theſe fruits. The ſtone of the Plumb is ſhaped like a Pear, and hath five longitudinal ridges on it. This grows naturally on moiſt land.

The ſeeds of the ſecond ſort were ſent me from Jamaica, with Plumier's title; the ſtones were exactly the ſame ſhape of thoſe of the former, but the plants have leaves compounded of ſeveral winged lobes, which are branched out oppoſite, each having ſix or ſeven pair of pinnæ (or lobes.) This ſort hath not flowered in England, ſo I can give no farther account of it.

As theſe trees are natives of the warm parts of America, ſo they will not thrive in England, unleſs they are kept in a warm ſtove. They are propagated by ſeeds, which muſt be obtained from the countries where the plants naturally grow; theſe muſt be ſown in the ſpring in ſmall pots filled with light earth, and plunged into a hot bed of tanners bark, obſerving frequently to water the pots; but not let them have much at each time. In ſix weeks the plants will come up, and, if properly managed, will be fit to remove in a month's time after, when they ſhould be carefully ſeparated, and each planted into a ſeparate ſmall pot filled with light kitchen-garden earth, and then plunged into the hot-bed again, obſerving to ſhade them from the ſun till they have taken freſh root; after which they muſt have air every day in proportion to the warmth of the ſeaſon, and their waterings during the ſummer ſhould be frequent, but ſparing. In the autumn the plants muſt be removed into the bark-ſtove, and plunged into the tan-bed; and in winter the plants muſt not have too much water, leſt it occaſions their throwing off their leaves. In ſummer they muſt have a good ſhare of air, and the plants in the ſtove ſhould be conſtantly treated in the ſame manner as other tender plants from the ſame countries.

CHRY-

CHRYSOCOMA. Lin. Gen. Plant. 845. Dillen. Gen. 14. Coma aurea. Boerh. 1. p. 121. Goldylocks.

The CHARACTERS are,

The common empalement is imbricated, the ſcales are narrow, the outer being convex and pointed; the flower is compoſed of many hermaphrodite florets, which are tubular, equal, and funnel-ſhaped, cut into five ſegments at the brim, which turn back; theſe have each five ſhort ſlender ſtamina, terminated by cylindrical ſummits; they have an oblong germen, ſupporting a ſlender ſtyle, crowned by two oblong depreſſed ſtigmas. The germen afterward becomes a ſingle, oblong, compreſſed ſeed, crowned with hairy down.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Æqualis; the plants of this ſection have only hermaphrodite florets, which are fruitful.

The SPECIES are,

1. CHRYSOCOMA (*Linoſyris*) herbacea, foliis linearibus, glabris, calycibus laxis. Lin. Sp. Plant. 841. *Herbaceous Goldylocks with narrow ſmooth leaves, and looſe empalements.* Coma aurea Germanica linariæ folio. Park. Theat. 688. *German Goldylocks.*
2. CHRYSOCOMA (*Biflora*) herbacea paniculata, foliis lanceolatis trinerviis, punctatis, nudis. Lin. Sp. Plant. 841. *Herbaceous Goldylocks with flowers growing in panicles, and ſpear-ſhaped leaves, having three nerves, and yellow flowers growing in umbels.*
3. CHRYSOCOMA (*Coma Aurea*) fruticoſa foliis linearibus dorſo decurrentibus. Hort. Cliff. 397. *Shrubby Goldylocks with very narrow leaves, whoſe back parts run along the ſtalks.* Coma aurea Africana fruticans, foliis linariæ auguſtis, major. Com. Hort. Amſt. 2. p. 89. *Greater ſhrubby African Goldylocks, with narrow Toad-flax leaves.*
4. CHRYSOCOMA (*Cernua*) ſubfruticoſa, foliis linearibus ſubtus piloſis, floribus ante floreſcentiam cernuis. Hort. Cliff. 397. *Shrubby Goldylocks with very narrow hairy leaves, and flowers nodding before they are blown.* Coma aurea foliis linariæ auguſtioribus minor. Hort. Amſt. 2. p. 89. *Leſſer Goldylocks with narrower Toad-flax leaves.*
5. CHRYSOCOMA (*Ciliata*) ſuffruticoſa, foliis linearibus rectis, ciliatis ramis pubeſcentibus. Lin. Sp. Plant. 481. *Shrubby Goldylocks with narrow leaves and downy branches.* Conyza Africana, tenuifolia, ſubfruteſcens, flore aureo. Hort. Elth. 104. tab. 68. *Narrow-leaved, African, ſhrubby Fleabane, with a golden flower.*

The firſt ſort grows naturally in Germany, and alſo in France and Italy; this hath a perennial root; the ſtalks riſe two feet and a half high, are round, ſtiff, and cloſely garniſhed with long, narrow, ſmooth leaves, which come out without any order, of a pale green colour; the upper part of the ſtalk divides into many ſlender foot-ſtalks, each ſuſtaining a ſingle head of flowers, which are compoſed of many hermaphrodite florets, contained in one common empalement, having very narrow ſcales. The flowers are of a bright yellow, and ſtand diſpoſed on the top of the ſtalk, in form of an umbel. Theſe appear in July; and in favourable ſeaſons are ſucceeded by ſeeds, which ripen in September, ſoon after which the ſtalks decay to the root, and new ones ariſe the following ſpring.

This plant is generally propagated by parting of the roots, that being the moſt expeditious method; for the ſeedling plants do not flower till the ſecond or third year. The beſt time to remove the plants and part their roots, is ſoon after the ſtalks decay in autumn, that the plants may get freſh roots before winter. It delights in a dry looſe ſoil, in which it will live in the open air, and propagate by its roots very faſt; but in ſtrong wet land, the roots often rot in winter.

The ſecond ſort grows naturally in Siberia, from whence the ſeeds were ſent to Peterſburgh, part of which I received from the late Dr. Amman, who was profeſſor of botany in that univerſity. This plant hath a perennial creeping root, which ſpreads on every ſide to a conſiderable diſtance, ſending up many erect ſtalks, garniſhed with flat ſpear-ſhaped leaves, ending in points; theſe are rough, and have three longitudinal veins; the upper part of the ſtalks branch out, and form looſe panicles of yellow flowers, which are larger than thoſe of the former ſort. This flowers in June and July, and the ſeeds ripen in autumn.

It propagates too faſt by its creeping roots to be admitted into the flower-garden, for the roots will often extend two or three feet every way in the compaſs of one year, ſo that they will interfere with the neighbouring flowers; but as the plants will grow in any ſoil or ſituation, ſo a few roots may be planted on the ſide of extenſive rural walks round the borders of fields, where they will require no care, and their flowers will make a good appearance, and continue long in beauty.

The third ſort grows naturally at the Cape of Good Hope. This riſes with a ligneous ſtalk about a foot high, dividing into many ſmall branches, which are garniſhed with narrow leaves, of a deep green, coming out on every ſide without order; the back part of each leaf hath a ſmall ſhort appendix, which runs along the ſtalks. The flowers are produced at the end of the branches, on ſlender naked foot-ſtalks; theſe are of a pale yellow, and ſhaped like thoſe of the former ſorts, but are larger. This plant flowers great part of the year, for which it is chiefly eſteemed; the ſeeds ripen very well in autumn, which if ſown on a common border of light earth in the ſpring, the plants will come up, and may be tranſplanted into pots, to be removed into ſhelter in winter, for theſe plants will not live through the winter in the open air in England.

The moſt expeditious method of propagating this plant is by cuttings, which, if planted in a common border in any of the ſummer months, and covered with hand-glaſſes, will eaſily take root, provided they are ſhaded from the ſun and duly watered: when theſe have gotten good roots they ſhould be carefully taken up, and each planted in a ſeparate pot, filled with light earth, placing them in the ſhade till they have taken new root; then they may be expoſed with other hardy exotic plants till autumn, when they muſt be removed into the green-houſe during the winter ſeaſon; they ſhould enjoy a large ſhare of free air in mild weather, for they only require protection from froſt, ſo muſt not be too tenderly treated.

The fourth ſort is a native of the Cape of Good Hope, from whence I received the ſeeds; this is a leſs plant than the former, it hath a ſhrubby ſtalk, branching out in the ſame manner; the leaves are ſhorter, and a little hairy; the flowers are not half ſo large, of a pale ſulphur colour, and nod on one ſide before they are blown. This alſo flowers great part of the year, and ripens ſeeds very well; but this is generally propagated in the ſame manner as the former, and the plants require the ſame treatment.

The fifth ſort is alſo a native of the ſame country as the two former; this hath a low ſhrubby ſtalk, which branches out on every ſide, very narrow, ſhort, rough, and reflexed; the flowers ſtand ſingle on the top of naked foot-ſtalks, which ariſe from the upper part of the branches; theſe flowers are larger than thoſe of the laſt, and ſtand erect. This plant requires the ſame treatment as the two former, and is propagated by cuttings in the ſame manner.

CHRYSOPHYLLUM. Lin. Gen. Plant. 233. Cainito. Plum. Nov. Gen. 9. tab. 9. The Star Apple.

The CHARACTERS are,

The empalement is permanent, and conſiſts of five ſmall, roundiſh, concave petals; the flower is compoſed of five petals, which ſpread open, and are cut in the middle into two parts; it hath five ſtamina placed alternate to the ſegments of the petals, terminated by heart-ſhaped ſummits: the oval germen is ſituated in the center, ſupporting

ing a ſhort ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a large, oval, fleſhy fruit, incloſing three or four flat ſeeds, having hard ſhells.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CHRYSOPHYLLUM (*Cainito*) foliis ovatis, parallele ſtriatis ſubtus, tomentoſo-nitidis. Jacq. Amer. 15. *Chryſophyllum with oval leaves, with parallel veins and neat woolly leaves on their under ſide.* Cainito folio ſubtus aureo, fructu olivæ formi. Plum. Nov. Gen. 10. *The Damſon-tree.*
2. CHRYSOPHYLLUM (*Glabrum*) foliis utrinque glaberrimis. Jacq. Amer. 15. *Chryſophyllum with very ſmooth leaves.* Cainito folio ſubtus aureo, fructu maliformi. Plum. Nov. Gen. 10. *The Star Apple.*

Theſe trees grow naturally in the Weſt-Indies, where the firſt ſort riſes from twenty to thirty feet high, dividing into many branches, garniſhed with oval leaves, ſmooth above, and of a gold colour on their under ſide; the flowers come out from the ſide of the branches, at the ſetting on of the leaves, in round cluſters, which are ſucceeded by oval, ſmooth, pulpy fruit, incloſing three or four hard flat ſeeds.

The ſecond ſort riſes with an upright trunk to the height of thirty or forty feet, dividing into many ſlender branches, garniſhed with ſpear-ſhaped leaves, coming out without order; from the wings of the leaves, and alſo at the extremity of the branches, the flowers are produced in bunches, which are ſucceeded by round pulpy fruit the ſize of a Golden Pippin, containing many flat hard ſeeds.

The fruit of both theſe trees is very rough and aſtringent at firſt, but by lying ſome time after they are gathered, they become mellow, like the Medlar. The timber of both theſe trees is uſed in buildings, and for ſhingles to cover houſes.

Theſe plants are preſerved in ſeveral curious gardens for the beauty of their leaves, eſpecially the firſt ſort, whoſe under ſides ſhine like ſattin, the upper ſides are of a deep green. The leaves continue all the year, ſo make a very pretty appearance in the ſtove at all ſeaſons.

Theſe trees, being natives of the warmeſt parts of the world, cannot be preſerved in this country, without being kept in the warmeſt ſtoves; and ſhould always remain in a hot-bed of tanners bark, otherwiſe they will make but little progreſs. They are propagated by ſeeds, which muſt be procured from the places of their growth, for they do not produce fruit in Europe. Theſe ſeeds muſt be freſh, otherwiſe they will not grow; and if they are ſent over in ſand, it will preſerve them from drying too much; when the ſeeds arrive, they muſt be ſown as ſoon as poſſible in ſmall pots filled with light freſh earth, and plunged into a good hot-bed of tanners bark. If the ſeeds are good, and the bed in a proper temperature of warmth, the plants will appear in five or ſix weeks; and in about two months after, will be ſtrong enough to tranſplant; in doing of which, the plants, with all the earth, ſhould be ſhaken out of the pots very carefully, and ſeparated with their roots entire, and each planted into a ſingle ſmall pot filled with freſh rich earth, and plunged again into a hot-bed of tanners bark, watering and ſhading them until they have taken freſh root. If the hot-bed in which theſe plants are plunged, is from time to time ſtirred, and a little freſh tan added to it, to renew the heat when it declines, the plants will make good progreſs, and in three or four months will be near a foot high, and may then be ſhifted into pots a ſmall ſize larger than thoſe they before were in. If theſe plants are conſtantly kept in a warm bed in the ſtove, and ſhifted twice a year, to renew the earth to their roots, they will thrive very faſt, and put out their ſide branches, ſo as to make a handſome appearance in the ſtove, with other curious plants of the ſame country; for though they do not produce either flowers or fruit, yet as they keep their leaves through the year, which are ſo very beautiful, they deſerve a place in the ſtove, better than moſt other plants. The chief care they require, is to keep them conſtantly in a proper degree of heat, and never to put them into too large pots; and in winter they ſhould not have too much water, about twice a week will be often enough to water them; and in the depth of winter, they ſhould not have much at each time.

Theſe trees are frequently propagated in the Weſt-Indies, by planting of their branches (as I have been informed by perſons of credit;) but I have not heard of their being propagated in England by that method.

CHRYSOSPLENIUM. Lin. Gen. Plant. 493. [χρυσοσπλήνιον, of χρυσὸς, Gold, and σπλὴν, the ſpleen; q. d. a plant, the flowers of which are of a golden colour, and good againſt diſeaſes of the ſpleen.] Golden Saxifrage.

The CHARACTERS are,

The empalement is divided into four or five parts, which ſpread open, are coloured, and permanent. The flower hath no petals, but eight or ten ſtamina, which are ſhort, erect, and ſtand oppoſite to the angles of the empalement, terminated by ſingle ſummits: the germen is immerſed in the empalement, ſupporting two ſhort ſtyles, crowned by obtuſe ſtigma. The germen afterward becomes a capſule with two beaks, opening with two valves, and filled with ſmall ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's tenth claſs, intitled Decandria Digynia, the flowers having ten ſtamina and two ſtyles.

The SPECIES are,

1. CHRYSOSPLENIUM (*Alternifolium*) foliis alternis. Flor. Suec. 317. *Golden Saxifrage with alternate leaves.* Saxifraga aurea foliis pediculis oblongis inſidentibus. Raii Syn. Hiſt. 206. *Golden Saxifrage with leaves growing upon long foot-ſtalks.*
2. CHRYSOSPLENIUM (*Oppoſitifolium*) foliis oppoſitis. Sauv. Monſp. 128. *Golden Saxifrage with oppoſite leaves.* Chryſoſplenium foliis amplioribus auriculatis. Tourn. Inſt. 146. *Golden Saxifrage with larger eared leaves.*

Theſe two plants are found growing wild in many parts of England, upon marſhy ſoils and bogs, as alſo in moiſt ſhady woods, and are ſeldom propagated in gardens; where, if any perſon has curioſity to cultivate them, they muſt be planted in very moiſt ſhady places, otherwiſe they will not thrive. They flower in March and April.

CIBOULS, or CHIBOULS. See CEPA.

CICER. Lin. Gen. Plant. 783. Tourn. Inſt. R. H. tab. 210. [This plant is called Cicer, of Κίκυς, ſtrength, becauſe it is ſaid to ſtrengthen: it is alſo called Arietaria, becauſe the ſeeds of it reſemble the head of a ram.] Cicer, or Chich Peaſe.

The CHARACTERS are,

The empalement of the flower is cut into five ſegments, four of which lie upon the ſtandard; the two middle, which are the longeſt, are joined, the other is under the keel. The flower is of the butterfly kind; the ſtandard is large, roundiſh, and plain; the wings are much ſhorter and obtuſe, the keel is ſhorter than the wings, and is ſharp-pointed. It hath ten ſtamina, nine of them are joined, and the tenth is ſeparate, terminated by ſingle ſummits. It hath an oval germen ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a turgid ſwelling pod of a rhomboidal figure, incloſing two roundiſh ſeeds, with a protuberance on their ſide.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, from the flower having ten ſtamina joined in two bodies.

There is but one SPECIES of this genus, viz.

CICER (*Arietinum*) foliolis ſerratis. Hort. Cliff. 370. *Chich Peaſe with ſawed leaves.* Cicer ſativum. C. B. P. 347. *Garden Chich Peaſe.*

There is a variety of this with a red ſeed, which differs from it in nothing but the colour.

It is much cultivated in Spain, being one of the ingredients in their olios, and is there called Garavance; it is alſo cultivated in France, but in England it is rarely ſown.

This plant is annual, ſhooting out ſeveral hairy ſtalks from the root, which are about two feet long; garniſhed with long winged leaves of a grayiſh colour, compoſed of ſeven or nine pair of ſmall roundiſh leaves (or lobes) terminated by an odd one, which are ſawed on their edges. From the ſide of the branches come out the flowers, ſometimes one, at other times two together. They are ſhaped like thoſe of Peaſe, but are much ſmaller and white, ſtanding on long foot-ſtalks; theſe are ſucceeded by ſhort hairy pods, including two ſeeds in each, which are the ſize of common Peaſe, but have a little knob or protuberance on one ſide.

The ſeeds of this plant may be ſown in the ſpring, in the ſame manner as Peaſe, making drills with a hoe, about an inch and a half deep, in which the ſeeds ſhould be ſown at about two inches aſunder, then with a rake draw the earth into the drill to cover the ſeeds. The drills ſhould be made at three feet diſtance from each other, that there may be room for their branches to ſpread, when the plants are fully grown, as alſo to hoe the ground between them, to keep it clean from weeds, which is all the culture theſe plants require.

This plant flowers in June, and the ſeeds ripen in Auguſt; but unleſs the ſeaſon proves warm and dry, the plants decay in this country before the ſeeds are ripe.

CICHORIUM. Lin. Gen. Plant. 825. Tourn. Inſt. R. H. tab. 272. [κιχώριον, or κιχόρειον, of κιχέω, to find, becauſe found every where in walking.] Succory.

The CHARACTERS are,

The flower hath a common ſcaly empalement, which at firſt is cylindrical, but is afterward expanded; the ſcales are narrow, ſpear-ſhaped, and equal. The flower is compoſed of many hermaphrodite florets, which are plain, uniform, and ſtand circularly, each having one petal, which is tongue-ſhaped, and cut into five ſegments. They have five ſhort hairy ſtamina, terminated by five-cornered cylindrical ſummits. The germen is ſituated under the petal, ſupporting a ſlender ſtyle, crowned by two turning ſtigmas: the germen afterward becomes a ſingle ſeed, incloſed with a down, and ſhut up in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis. The plants of this ſection have only hermaphrodite fruitful florets.

The SPECIES are,

1. CICHORIUM (*Intybus*) floribus geminis ſeſſilibus, foliis runcinatis. Flor. Suec. 650. *Succory with two flowers ſitting cloſe to the ſtalk.* Cichorium ſylveſtre ſive officinarum. C. B. P. 126. *Wild Succory.*
2. CICHORIUM (*Spinoſum*) caule dichotomo ſpinoſo floribus axillaribus ſeſſilibus. Hort. Cliff. 388. *Succory with a prickly forked ſtalk.* Cichorium ſpinoſum. C. B. P. 126. *Prickly Succory.*
3. CICHORIUM (*Endivia*) floribus ſolitariis pedunculatis, foliis integris, crenatis. Hort. Cliff. 389. *Succory with ſingle flowers on foot-ſtalks, and entire crenated leaves.* Cichorium latifolium, ſive endivia vulgaris. C. B. P. 125. *Broad-leaved Succory, or common Endive.*
4. CICHORIUM (*Criſpum*) floribus ſolitariis pedunculatis, foliis fimbriatis, criſpis. *Succory with ſingle flowers on foot-ſtalks, and fringed curled leaves.* Endivia criſpa. C. B. P. 125. *Curled Endive.*

The firſt ſort grows naturally by the ſides of roads and in ſhady lanes, in many parts of England: this has been ſuppoſed to be no other way differing from the garden Succory, but by the latter being cultivated in gardens; indeed, moſt of the writers on botany, have confounded the two ſorts together; for the Garden Succory which is deſcribed in moſt of the old books, I take to be the broad-leaved Endive, which is the third ſort here enumerated, for I have many years cultivated both ſorts in the garden, without finding either of them alter. There is an eſſential difference between theſe, for the wild Succory hath a perennial creeping root, whereas the other is at moſt but a biennial plant; and if the ſeeds of the latter are ſown in the ſpring, the plants will flower and produce ſeeds the ſame year, and periſh in autumn, ſo that it may rather be called annual. The wild Succory ſends out from the roots long leaves, which are jagged to the midrib, each ſegment ending in a point; from between theſe ariſe the ſtalks, which grow from three to four feet high, garniſhed with leaves, ſhaped like thoſe at the bottom, but are ſmaller, and embrace the ſtalks at their baſe. Theſe branch out above into ſeveral ſmaller ſtalks, which have the ſame leaves, but ſmaller and leſs jagged; the flowers are produced from the ſide of the ſtalks, which are of a fine blue colour; theſe are ſucceeded by oblong ſeeds, incloſed in a down. It flowers in June and July, and the ſeeds ripen in September.

The ſecond ſort grows naturally on the ſea-coaſts in Sicily and the iſlands of the Archipelago. This ſends out from the root many long leaves, which are indented on their edges, ſpreading flat on the ground; from between theſe ariſe the ſtalks, which have very few leaves, and thoſe ſmall and entire: the ſtalks are divided in forks upward, from between theſe come out the flowers, which are of a pale blue, and are ſucceeded by ſeeds ſhaped like thoſe of the common ſort; the ends of the ſmaller branches are terminated by ſtar-like ſpines, which are very ſharp. The plant is biennial with us in England, and in cold winters is frequently killed. It flowers and ſeeds about the ſame time with the former ſort, and may be treated in the ſame way as the Endive.

The broad leaved Succory or Endive, differs from the wild ſorts in its duration, the root always periſhing after it has ripened ſeeds: the leaves are broader, rounder at the top, and not laciniated on the ſides as the leaves of the wild; the branches are more horizontal, and the ſtalks never riſe ſo high.

This ſort is not much cultivated in the Engliſh gardens at preſent, for the curled Endive being tenderer, and not ſo bitter, is generally preferred to it. The broad-leaved and curled Endive has been ſuppoſed to be only varieties from each other, which hath accidentally been produced by culture; but from having cultivated both near forty years, I could never find that they ever altered, otherwiſe than by the curled ſort coming more or leſs curled; the leaves of this ſort have only a few ſlight indentures on their edges, and the ſtalks grow more erect, having but few leaves upon them. This, when blanched, has a bitter taſte, which has occaſioned its being generally neglected in England, but in Italy it is ſtill cultivated in their gardens.

All the ſorts of Succory are eſteemed aperitive and diuretic, opening obſtructions of the liver, and good for the jaundice; it provokes urine, and cleanſes the urinary paſſages of ſlimy humours, which may ſtop their paſſage.

The curled Endive is now much cultivated in the Engliſh gardens, being one of the principal ingredients in the ſallads of autumn and winter, for which purpoſe it is continued as long as the ſeaſons will permit. I ſhall therefore give directions for the managing of this plant, ſo as to have it in perfection during the autumn and winter months.

The firſt ſeaſon for ſowing of theſe ſeeds is in May, for thoſe which are ſown earlier in the year, generally run up to ſeed, before they have arrived to a proper ſize for blanching; and it frequently happens, that the ſeeds ſown in May in the rich ground near London, will run to ſeeds the ſame autumn; but in ſituations which are colder, they are not ſo apt to run up, therefore there ſhould be ſome ſeeds ſown about the middle or latter end of that month. The ſecond ſowing ſhould be about the middle of June, and the laſt time in the middle of July. From theſe three different crops, there will be a ſupply for the table during the whole ſeaſon; for there will be plants of each ſowing, very different in their growth, ſo that there

there will be three different crops from the ſame beds.

When the plants come up they muſt be kept clean from weeds, and in dry weather duly watered, to keep them growing till they are fit to tranſplant, when there ſhould be an open ſpot of rich ground prepared to receive the plants, in ſize proportionable to the quantity intended. When the ground is well dug and levelled, if it ſhould be very dry, it muſt be well watered to prepare it to receive the plants; then the plants ſhould be drawn up from the ſeed-bed carefully, ſo as not to break their roots, drawing out all the largeſt plants, leaving the ſmall ones to get more ſtrength; which, when they have room to grow, by taking away the large ones, they will ſoon do. As the plants are drawn up, they ſhould be placed with their roots even, all the ſame way, and every handful as they are drawn, ſhould have the tops of their leaves ſhortened, to make them of equal length: this will render the planting of them much eaſier, than when the plants are promiſcuouſly mixed, heads and tails: then the ground ſhould be marked out in rows at one foot aſunder, and the plants ſet ten inches diſtant in the rows, cloſing the earth well to their roots, and let them be well watered; and repeat this every other evening, till the plants have taken good root, after which they muſt be kept clean from weeds.

When the plants of the ſeed-bed have been thus thinned, they ſhould be well cleaned from weeds and watered, which will encourage the growth of the remaining plants, ſo that in ten days or a fortnight after, there may be another thinning made of the plants, which ſhould be tranſplanted in the ſame manner. And at about the ſame diſtance of time, the third and laſt drawing of plants may be tranſplanted.

Thoſe plants which were the firſt tranſplanted, will be fit to blanch by the latter end of July at fartheſt; and if they are properly managed, in three weeks or a month, they will be ſufficiently blanched for uſe, which will be as ſoon as theſe ſallads are commonly required; for during the continuance of good Cos Lettuce, few perſons care for Endive in their ſallads; nor, indeed, is it ſo proper for warm weather. If any of the plants ſhould put out flower-ſtems, they ſhould be immediately pulled up and carried away, being good for nothing, ſo ſhould not be left to incommode the neighbouring plants. As the quantity of roots neceſſary for the ſupply of a middling family is not very great, ſo there ſhould not be too many plants tied up to blanch at the ſame time, therefore the largeſt ſhould be firſt tied, and in a week after thoſe of the next ſize; ſo that there may be three different times of blanching the plants, on the ſame ſpot of ground. But as in ſome large families there is a great conſumption of this herb for ſoups, ſo the quantities of plants ſhould be proportionably greater, at each time of planting and blanching. The manner of blanching is the next thing to be treated of, therefore in order to this you ſhould provide a parcel of ſmall Oſier twigs (or baſs mat) to tie up ſome of the largeſt heads to blanch; which ſhould be done in a dry afternoon, when there is neither dew nor rain to moiſten the leaves in the middle of the plants, which would occaſion their rotting ſoon after their being tied up. The manner of doing it is as follows, viz. You muſt firſt gather up all the inner leaves of the plant in a regular order, into one hand, and then take up thoſe on the outſide that are ſound, pulling off and throwing away, all the rotten and decayed leaves which lie next the ground; obſerving to place the outſide leaves all round the middle ones, as near as poſſible to the natural order of their growth, ſo as not to croſs each other: then having got the whole plant cloſe up in your hand, tie it up with the twig, baſs, &c. at about two inches below the top, very cloſe; and about a week after go over the plants again, and give them another tie about the middle of the plant, to prevent the heart leaves from

burſting out on one ſide; which they are ſubject to do, as the plants grow, if not prevented this way.

In doing of this you need only tie up the largeſt plants firſt, and ſo go over the piece once a week, as the plants increaſe in their growth; by which means you will continue the crop longer, than if they were all tied up at one time: for when they are quite blanched, which will be in three weeks or a month after tying, they will not hold ſound and good above ten days or a fortnight, eſpecially if the ſeaſon proves wet: therefore it is that I would adviſe to ſow at three or four different ſeaſons, that you may have a ſupply as long as the weather will permit. But in order to this, you muſt tranſplant all the plants of the laſt ſowing under warm walls, pales, or hedges, to ſcreen the plants from froſt; and if the winter ſhould prove very ſharp, you ſhould cover them with ſome Peaſe haulm, or ſuch other light covering, which ſhould be conſtantly taken off in mild weather: theſe borders ſhould alſo be as dry as poſſible, for theſe plants are very ſubject to rot, if planted in a moiſt ſoil in winter.

Although I before directed the tying up of the plants to blanch them, yet this is only to be underſtood for the two firſt ſowings; for after October, when the nights begin to be froſty, thoſe plants which are ſo far above ground will be liable to be much prejudiced thereby, eſpecially if they are not covered in froſty weather; therefore the beſt method is, to take up your plants of the latter ſowings in a very dry day, and with a large flat-pointed dibble, plant them into the ſides of trenches of earth, which ſhould be laid very upright, planting them ſideways, on the ſouth ſide of the trenches, towards the ſun, with the tops of the plants only out of the ground, ſo that the haſty rains may run off, and the plants be kept dry, and ſecured from froſts.

The plants thus planted, will be blanched fit for uſe in about a month or five weeks time, after which it will not keep good more than three weeks, before it will decay; you ſhould therefore continue planting ſome freſh ones into trenches every fortnight or three weeks, that you may have a ſupply for the table; and thoſe which were laſt tranſplanted out of the ſeed beds, ſhould be preſerved till February, before they are planted to blanch; ſo that from this you may be ſupplied until the beginning of April, or later: for at this laſt planting into the trenches, it will keep longer than in winter, the days growing longer; and the ſun, advancing with more ſtrength, dries up the moiſture much ſooner than in winter, which will prevent the rotting of theſe plants; but if the weather ſhould prove froſty, theſe latter plantations of Endive ſhould be covered with mats and ſtraw to preſerve it, otherwiſe the froſt will deſtroy it, but the coverings muſt always be taken off when the weather is favourable.

When your Endive is blanched enough for uſe, you muſt dig it up with a ſpade; and after having cleared it from all the outſide green and decayed leaves, you ſhould waſh it well in two or three different waters to clear it the better from ſlugs, and other vermin, which commonly ſhelter themſelves amongſt the leaves thereof, and then you may ſerve it up to the table with other ſallading.

But in order to have a ſupply of good ſeeds for the next ſeaſon, you muſt look over thoſe borders where the laſt crop was tranſplanted, before you put them into the trenches to blanch; and make choice of ſome of the largeſt, ſoundeſt, and moſt curled plants, in number according to the quantity of ſeeds required: for a ſmall family, a dozen of good plants will produce ſeeds enough; and for a large, two dozen or thirty plants.

Theſe ſhould be taken up and tranſplanted under a hedge or pale, at about eighteen inches diſtance, in one row about ten inches from the hedge, &c. This work ſhould be done in the beginning of March, if the ſeaſon is mild, otherwiſe it may be deferred a fortnight

fortnight longer. When the flower-ſtems begin to advance, they ſhould be ſupported with a packthread, which ſhould be faſtened to nails driven into the pale, or to the ſtakes of the hedge, and run along before the ſtems, to draw them upright cloſe to the hedge or pale, otherwiſe they will be liable to break with the ſtrong winds. Obſerve alſo to keep them clear from weeds, and about the beginning of July your ſeeds will begin to ripen; therefore, as ſoon as you find the ſeeds are quite ripe, you muſt cut off the ſtalks, and expoſe them to the ſun upon a coarſe cloth to dry; and then beat out the ſeeds, which muſt be dried, and put up in bags of paper, and preſerved for uſe in ſome dry place. But I would here caution you, not to wait for all the ſeeds ripening upon the ſame plant; for if ſo, all the firſt ripe and beſt of the ſeeds will ſcatter and be loſt before the other are near ripe; ſo great a difference is there in the ſeeds of the ſame plant being ripe.

The wild Succory (of which there are ſome varieties in the colour of the flowers) is ſeldom propagated in gardens; it growing wild in unfrequented lanes and dunghills in divers parts of England, where the herb women gather it, and ſupply the markets for medicinal uſe.

CICUTA properly ſignifies an hollow intercepted between two knots, of the ſtalks or reeds of which the ſhepherds uſed to make their pipes, as Virgil ſings;

Eſt mihi diſparibus ſeptem compacta Cicutis
Fiſtula——

CICUTA. Lin. Gen. Plant. 316. Sium. Raii Syn. 212. Water Hemlock.

The CHARACTERS are,

It is a plant with an umbellated flower; the principal umbel is compoſed of ſeveral ſmaller (called rays;) theſe are equal, roundiſh, and briſtly: the great umbel hath no involucrum, but the ſmaller have, which are compoſed of many ſhort leaves. The flowers have each five oval petals nearly equal, which turn inward; they have five hairy ſtamina, which are longer than the petals, terminated by ſingle ſummits. The germen is ſituated below the flower, ſupporting two ſlender ſtyles, which are permanent and longer than the petals, crowned by ſtigmas in form of a head. The germen afterward becomes a roundiſh channelled fruit dividing into two parts, containing two oval ſeeds, plain on one ſide and convex on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs of plants, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles. The title of this genus has been generally applied to the common Hemlock, which grows naturally on the banks by highways, in moſt parts of England. But to that plant Dr. Linnæus has applied the old title of Conium, and added this title to the poiſonous Water Hemlock deſcribed by Webſer.

The SPECIES are,

1. CICUTA (*Viroſa*) umbellis oppoſitis foliis, petiolis marginatis. Lin. Sp. Plant. 255. *Hemlock with umbels oppoſite to the leaves, and obtuſe marginated foot-ſtalks.* Sium erucæ folio. C. B. P. 154. *Sium with a Rocket leaf.* Cicuta aquatica Geſneri. J. B. 111. 2. p. 175. *Water Hemlock of Geſner.*
2. CICUTA (*Maculata*) foliorum ſerraturis mucronatis, petiolis membranaceis, apice bilobis. Lin. Sp. Plant. 256. *Hemlock with pointed ſerratures to the leaves, and membranaceous foot-ſtalks ending in two lobes.* Angelica Virginiana foliis acutioribus, ſemine ſtriato minore, cumini ſapore & odore. Mor. Hiſt. 3. p. 281. *Virginia Angelica with pointed leaves, and a ſmall channelled ſeed, having the taſte and ſmell of Cumin.*
3. CICUTA (*Bulbifera*) ramis bulbiferis. Lin. Sp. 367. *Hemlock, whoſe branches bear bulbs.* Ammi foliorum lacinulis capillaribus, caule angulato. Flor. Virg. 31.

The firſt ſort grows naturally in ſtanding waters in many parts of England, ſo is never propagated in gardens; for unleſs there is a conſiderable depth of ſtanding water for the plants to root in, they will not grow. I have ſeveral times tranſplanted theſe plants into ponds, where they have grown one ſummer, but have not continued through the winter.

It grows near four feet high, with a branching hollow ſtalk, garniſhed with winged leaves. The ſtalks are terminated by umbels of yellowiſh flowers, which are ſucceeded by ſmall channelled ſeeds like thoſe of Parſley. It flowers in June and July, and the ſeeds ripen in autumn.

The ſecond ſort grows naturally in North America, from whence the ſeeds have been brought to England, where the plants are preſerved in botanic gardens for the ſake of variety. This is propagated by ſeeds, which ſhould be ſown in autumn in a ſhady border, where the plants will come up in the ſpring, and require no other care but to keep them clean.

The third ſort is a native of North America. This is ſometimes preſerved in botanic gardens for variety, but being a plant of no great beauty or uſe, is ſeldom allowed a place in other gardens. It is propagated by ſeeds, which ſhould be ſown in autumn, and the plants afterward treated as thoſe of the ſecond ſort.

CICUTARIA. See LIGUSTICUM.

CINARA. See CYNARA.

CINERARIA, Sea Ragwort.

The CHARACTERS are,

It has a ſimple empalement, compoſed of many ſmall equal leaves. The flower is radiated. The diſk is compoſed of many hermaphrodite florets, which are funnel-ſhaped, cut into five ſegments at the top; theſe have five ſlender ſtamina, crowned by cylindrical ſummits, and an oblong germen, ſupporting a very ſlender ſtyle, crowned by two erect ſtigmas. The germen afterward becomes a narrow four-cornered ſeed, covered with downy hairs. The female florets which compoſe the rays are tongue-ſhaped, indented at their points; theſe have an oblong germen with two ſtyles, and have ſeeds like the hermaphrodite florets, which are included in the empalement.

This genus of plants is ranged in the ſecond order of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua, the flowers being compoſed of hermaphrodite and female florets, which are both fruitful.

The SPECIES are,

1. CINERARIA (*Geifolia*) pedunculis ramoſis, foliis reniformibus ſuborbiculatis ſublobatis dentatis petiolatis. Lin. Sp. 1242. *Ragwort with branching foot-ſtalks, kidney-ſhaped, orbicular, indented leaves upon foot-ſtalks.* Jacobæa Africana, hederæ terreſtris folio, repens. Hort. Amſt. 2. p. 145.
2. CINERARIA (*Maritima*) floribus paniculatis, foliis pinnatifidis tomentoſis, laciniis ſinuatis, caule fruteſcente. Lin. Sp. 1244. *Sea Ragwort with a ſhrubby ſtalk, woolly wing-pointed leaves, and flowers growing in panicles.* Jacobæa maritima. C. B. P. 131. *Sea Ragwort.*
3. CINERARIA (*Amelloides*) pedunculis unifloris, foliis ovatis oppoſitis, caule ſuffruticoſo. Lin. Sp. 1245. *Ragwort with an under ſhrub ſtalk, oval leaves placed oppoſite, and foot-ſtalks with one flower.* After caule ramoſo ſcabro perenne, foliis ovatis ſeſſilibus, pedunculis nudis unifloris. Fig. pl.
4. CINERARIA (*Othonnites*) pedunculis unifloris, foliis oblongis indiviſis ſubdentatis petiolatis alternis nudis. Lin. Sp. 1244. *Ragwort with oblong undivided leaves ſlightly indented, and foot-ſtalks with one flower.* Jacobæa Africana fruteſcens, craſſis & ſucculentis foliis. Hort. Amſt. 2. p. 147.
5. CINERARIA (*Tomentoſa*) foliis pinnato-ſinuatis dentatis ſubtus tomentoſis, floribus paniculatis, caule fruteſcente. *Ragwort with ſinuated, wing-ſhaped, indented leaves, downy on their under ſide, flowers in panicles, and a ſhrubby ſtalk.* Jacobæa maritima latifolia. C. B. P. 69.

There are ſeveral other ſpecies of this genus than are here enumerated, but being plants of little uſe or beauty are omitted, as they are rarely cultivated in gardens.

The

The firſt ſort grows naturally at the Cape of Good Hope. The root of this is compoſed of many ſmall fibres; the ſtalks are weak, ſo trail on the ground, if they are not ſupported; but if they are will riſe four feet high, dividing into many branches, garniſhed with roundiſh kidney-ſhaped leaves, crenated on their edges; the flowers are produced at the extremity of the branches in ſmall cluſters; they are yellow, and in ſhape like thoſe of the common Ragwort, which are ſucceeded by ſeeds, crowned with down.

This ſort is eaſily propagated by cuttings, which, if planted in a ſhady border during the ſummer months, and duly watered, will put out roots in a month or five weeks; ſoon after which it will be proper to tranſplant them into pots, becauſe their roots are very apt to ſpread in the full ground; ſo when the plants are taken up, many of their roots are torn off, whereby the plants are endangered. This is alſo often the caſe of the plants in pots. When they are not often removed, their roots will ſhoot through the holes in the bottom of the pots into the ground, and the plants will grow luxuriantly; but when the pots are removed, and thoſe roots torn off, the plants are often killed thereby. As this plant grows naturally at the Cape of Good Hope, it is too tender to live through the winters in England in the open air; yet if it is nurſed tenderly, it is very apt to draw up weak, and thereby is deſtroyed; therefore the ſureſt method to preſerve it, is to make young plants annually from cuttings, and to place them in a common hot-bed frame in winter, where they may enjoy the full air in mild weather, but be ſcreened from the froſt, and in ſummer place them abroad with other of the hardier ſorts of exotic plants.

The ſecond ſort grows naturally on the ſea-coaſts in ſome parts of England and Wales, in particular warm ſpots, but in the ſouth of France and Italy, it is very common. This hath many ligneous ſtalks, which riſe two or three feet high, dividing into many branches, which have a white downy bark, and are garniſhed with very woolly leaves ſix or eight inches long, deeply ſinuated, and jagged on their borders into many winged points; they are downy on both ſides. The ſtalks which ſupport the flowers are a foot or more in length, having two or three ſmall leaves on each, ſhaped like thoſe below, and are terminated by many yellow flowers growing in panicles, ſhaped like thoſe of common Ragwort; theſe appear in June, July, and Auguſt, and are ſucceeded by ſeeds, which ripen the beginning of October.

This ſort is alſo eaſily propagated by planting cuttings or ſlips of it on a ſhady border during the ſummer months, obſerving to water them duly. When theſe are well rooted, they ſhould be planted in a dry rubbiſhing ſoil, where they will reſiſt the cold of our ordinary winters very well, and continue many years; but in rich moiſt ground, the plants are often ſo very luxuriant in ſummer, as to be killed in winter when there is much froſt.

The third ſort grows naturally at the Cape of Good Hope. This hath branching ſtalks, which are ſhrubby, and riſe from two to three feet high, garniſhed with oval leaves placed oppoſite: the foot-ſtalks of the flowers are long, naked, and ſupport one blue flower at the top, whoſe rays are reflexed; theſe appear great part of the year, and thoſe which blow in ſummer are ſucceeded by compreſſed ſeeds crowned with down.

This may be propagated by ſowing the ſeeds on a bed of light earth the beginning of April, and when the plants are fit to remove, they ſhould be part of them planted in pots, that they may be ſheltered in winter under a hot-bed frame; the remainder may be planted cloſe to a warm wall in poor ground, where, if the winter proves favourable, they will live; but if theſe fail, thoſe in the frame will be ſecured. It may alſo be propagated by cuttings, in the ſame manner as the laſt mentioned.

The fourth ſort hath ſhrubby branching ſtalks, which riſe three or four feet high, garniſhed with oblong, thick, undivided leaves, of a glaucous colour. The flowers are produced on branching foot-ſtalks, ariſing toward the end of the branches; they are yellow, ſhaped like thoſe of the other ſorts, but are rarely ſucceeded by ſeeds in England. This is eaſily propagated by cuttings any time in ſummer: the plants, when rooted, muſt be planted in pots, that they may be removed into ſhelter in winter, for they will not live abroad in England. It grows naturally at the Cape of Good Hope.

The fifth ſort grows naturally on the ſea coaſts of Italy and Sicily. This has great reſemblance to the ſecond ſort, but the ſtalks are more woody, riſe higher, and do not branch ſo much. The leaves are broader, not ſo much ſinuated, and are of a black green colour on their upper ſide. The flowers are produced in ſmaller bunches on the top of the foot-ſtalks, and are like thoſe of the ſecond ſort, but are rarely ſucceeded by ſeeds in England, nor are the plants ſo hardy, therefore ſhould be ſheltered in winter. It is eaſily propagated by cuttings during the ſummer months, in the ſame way as the ſecond ſort.

CIRCEA. Lin. Gen. Plant. 24. Tourn. Inſt. R. H. 301. tab. 155. [It is ſaid to be ſo called from Circe, the famous enchantreſs, ſaid to have enchanted Ulyſſes and his companions. Boerhaave ſuppoſes it to be ſo called, becauſe the fruit of this plant takes hold of peoples cloaths, and by this means draws them to it, as the enchantreſs Circe was wont to do by her enchantments.] Enchanter's Nightſhade.

The CHARACTERS are,

The empalement of the flower is compoſed of two oval concave leaves: the flower hath two heart-ſhaped petals, which are equal and ſpread open; it hath two erect hairy ſtamina, terminated by roundiſh ſummits. The germen is ſituated under the flower, ſupporting a ſlender ſtyle, crowned by an obtuſe bordered ſtigma. The empalement afterward becomes a rough oval capſule with two cells opening lengthways, each containing a ſingle oblong ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's ſecond claſs, intitled Diandria Monogynia, the flower having two ſtamina and one ſtyle.

The SPECIES are,

1. CIRCEA (*Lutetiana*) caule erecto, racemis pluribus. Lin. Sp. Plant. 9. *Enchanter's Nightſhade, with an upright ſtalk and many ſpikes of flowers.* Circea lutetiana. Lob. Icon. 266. *Common Enchanter's Nightſhade.*

2. CIRCEA (*Alpina*) caule adſcendente, racemo unico. Lin. Sp. Plant. 9. *Enchanter's Nightſhade, with an aſcending ſtalk and a ſingle ſpike.* Circea minima. Col. p. 2. 80. *Leaſt Enchanter's Nightſhade.*

The firſt ſort grows naturally in ſhady woods, and under hedges, in many parts of England. This plant hath a creeping root, by which it multiplies greatly. The ſtalks are upright, and riſe a foot and a half high, garniſhed with heart-ſhaped leaves placed oppoſite, upon very long foot-ſtalks: theſe are of a dark green on their upper ſide, but are pale on their under ſide. The ſtalks are terminated by looſe ſpikes of flowers, which are branched out into three or four ſmall ſpikes. The flowers are ſmall and white, having but two petals, oppoſite to which are ſituated the two ſtamina. After the flowers fall away, the empalement of the flower becomes a rough capſule, incloſing two oblong ſeeds.

The ſecond ſort grows at the foot of mountains in many parts of Germany. It alſo grows naturally in a wood near the Hague, from whence I brought it to England. This ſort ſeldom riſes more than ſix or eight inches high, with a ſlender ſtalk, garniſhed with leaves ſhaped like thoſe of the former ſort, but ſmaller, and are indented on their edges. The flowers are produced on ſingle looſe ſpikes at the top of the ſtalks, which are ſmaller than thoſe of the former ſort, but of the ſame form and colour. Theſe plants flower in June, and their ſeeds ripen in Auguſt; but they both multiply exceedingly by their creeping

roots, ſo are ſeldom kept in gardens, unleſs for the ſake of variety.

If the roots are planted in any ſhady moiſt part of a garden, they will increaſe faſt enough without any care.

CIRCULATION of the ſap. See SAP.

CIRRI are thoſe fine ſtrings or fibres put out from the ſtalks of plants, by which ſome plants faſten themſelves to walls, pales, or trees, in order to their ſupport, as Ivy, &c.

CIRSIUM. See CARDUUS.

CISSAMPELOS. Lin. Gen. Plant. 993. Caapeba. Plum. Nov. Gen. 33. tab. 29.

The CHARACTERS are,

It is male and female in different plants; the male flowers have no empalement; they have four oval plain petals, and a wheel-ſhaped nectarium in the diſk, with four ſmall ſtamina joined together, crowned by plain ſummits. The female flowers have neither empalement or corolla; inſtead of petals, there is a large nectarium, whoſe membranes ſtand round the hairy oval germen, which afterward becomes a ſucculent berry, incloſing a ſingle ſeed.

This genus of plants is ranged in the twelfth ſection of Linnæus's twenty-ſecond claſs, intitled Dioecia Monodelphia, the male and female flowers being on different plants, and the male flowers have four ſtamina, which are joined in one body.

The SPECIES are,

1. CISSAMPELOS (*Pariera*) foliis peltatis cordatis emarginatis. Lin. Sp. 1473. *Ciſſampelos with target heart-ſhaped leaves which are indented at their top.* Caapeba folio orbiculari, & umbilicato lævi. Plum. Nov. 33. *Caapeba with a round, ſmooth, umbilicated leaf.*
2. CISSAMPELOS (*Caapeba*) foliis baſi petiolatis integris. Lin. Sp. 1473. *Ciſſampelos with leaves having foot-ſtalks, and entire at their baſe.* Caapeba folio orbiculari non umbilicato. Plum. Nov. Gen. 33. *Caapeba with a round leaf not umbilicated, called Velvet Leaf in America.*

These plants grow naturally in the warmeſt parts of America, where they twiſt themſelves about the neighbouring ſhrubs, and riſe to the height of five or ſix feet. The firſt ſort hath round heart-ſhaped leaves, whoſe foot-ſtalks are ſet within the baſe of the leaf, reſembling an ancient target; theſe are hairy on their under ſide, and have pretty long ſlender foot-ſtalks. Toward the upper part of the ſtalks the flowers come out from the wings of the leaves; thoſe of the male plants grow in ſhort ſpikes or cluſters, and are of a pale herbaceous colour; but the female flowers are produced in long looſe racemi from the ſide of the ſtalks, and are ſucceeded by a ſingle pulpy berry incloſing a ſingle ſeed.

The ſecond ſort hath round heart-ſhaped leaves, which are extremely woolly and ſoft to the touch; theſe have their foot-ſtalks placed at the baſe between the two ears; the flowers of this come out in bunches from the ſide of the ſtalks, in the ſame manner as the firſt. The ſtalks and every part of the plant is covered with a ſoft woolly down.

The ſeeds of both theſe plants were ſent me from Jamaica, by the late Dr. Houſtoun, which ſucceeded in the Chelſea garden, where the plants produced their flowers for ſeveral years; and the fruit of the firſt ſort were produced, but theſe would not grow, though they ſeemed to be perfectly ripened; but the plants grew at ſome diſtance from the male, ſo were probably not impregnated.

These plants are propagated by ſeeds, which ſhould be ſown upon a hot-bed in the ſpring; and the plants muſt afterward be treated in the ſame way as other tender exotics, keeping them conſtantly in the bark-ſtove, otherwiſe they will not live in this country.

The firſt ſort is ſuppoſed to be the Pareira, whoſe root has been ſo much eſteemed as a diuretic. But by a ſpecimen which I received from the late Dr. Houſtoun, under the title of Pariera, it ſhould rather be ranged under the genus of Smilax.

CISSUS, Wild Grape.

The CHARACTERS are,

It hath a ſmall many-leaved empalement, and four concave petals to the flower, with a large nectarium at the border of the germen, and four ſtamina the length of the corolla inſerted in the nectarium, crowned by roundiſh ſummits. The germen is four-cornered, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by an acute ſtigma. The cover of the flower afterward becomes a berry incloſing one roundiſh ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flowers having four ſtamina and one ſtyle.

The SPECIES are,

1. CISSUS (*Cordifolia*) foliis cordatis integerrimis. Lin. Sp. 170. *Wild Grape with entire heart-ſhaped leaves.* Vitis folio ſubrotundo, uva corymboſa cæruleo. Plum. Gen. 18.
2. CISSUS (*Sicyoides*) foliis ovatis nudis ſetaceo ſerratis. Lin. Sp. 170. *Wild Grape with oval leaves which are ſawed.* Bryonia alba geniculato, violæ foliis, baccis e viridi-purpuraſcentibus. Sloan. Hiſt. Jam. 1. p. 106.
3. CISSUS (*Acida*) foliis ternatis oblongis carnoſis inciſis. Lin. Sp. 170. *Wild Grape with trifoliate leaves, which are oblong, fleſhy, and cut on their edges.* Vitis trifolia minor corymboſa, acinis nigrioribus turbinatis. Plum. Sp. 18.
4. CISSUS (*Trifoliata*) foliis ternatis ſubrotundis ſubdentatis. Lin. Sp. 170. *Wild Grape with roundiſh trifoliate leaves, which are ſlightly indented.* Bryonia alba triphylla maxima. Sloan. Hiſt. Jam. 1. p. 106.

These plants all of them grow naturally in the iſland of Jamaica, and in ſome of the other iſlands in the warm parts of America, where they ſend out ſlender branches, having tendrils at their joints, by which they faſten to the neighbouring trees, buſhes, and any other ſupport, mounting to a conſiderable height. The firſt ſort produces bunches of fruit, which are frequently eaten by the negroes, but are chiefly food for birds and wild fowl, as indeed are moſt of the fruit of the other ſorts, as they all grow in the uncultivated parts.

The plants are preſerved in ſome of the European gardens, more for the ſake of variety, than for uſe or beauty, as they rarely produce either fruit or flowers in moderate climates. They are propagated either by laying their flexible branches down in pots of earth, where they will put out roots in four or five months, or by planting cuttings in pots filled with light earth, which ſhould be plunged into a moderate hot-bed of tanners bark, covering the pots cloſely with hand-glaſſes to exclude the outer air: the cuttings muſt be frequently refreſhed with water, but not too much given at each time. When theſe or the layers are well rooted, they ſhould be carefully taken up, and each planted in a ſmall pot filled with light earth, and plunged into the hot-bed of tan, where they ſhould conſtantly remain, being too tender to thrive in England, but with this care. Therefore they ſhould be ſhifted into larger pots when it is neceſſary, and their branches muſt be ſupported with ſtakes, to prevent them from trailing over the neighbouring plants; and in warm weather the plants ſhould have free air admitted to them daily. With this treatment they will thrive very well.

CISTUS. Lin. Gen. Plant. 598. Tourn. Inſt. R. H. 259. tab. 136. [It is ſo called from Κίστος, or Κισσὸς, *Gr.* Ivy, becauſe its ſmall ſeminal veſſel is incloſed in a ciſta, or little cheſt.] Rock-roſe.

The CHARACTERS are,

The flower hath a five-leaved empalement which is permanent, two of the middle alternate leaves being ſmaller than the other. The flower hath five large roundiſh petals which ſpread open; it hath a great number of hairy ſtamina, which are ſhorter than the petals, and are terminated by ſmall roundiſh ſummits. In the center is ſituated a roundiſh germen, ſupporting a ſingle ſtyle the length of the ſtamina, crowned by a plain orbicular ſtigma. The germen afterward becomes an oval cloſe capſule, having in ſome five, and others ten cells, filled with ſmall roundiſh ſeeds.

This

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flowers having many ſtamina and but one ſtyle.

The SPECIES are,

1. CISTUS (*Piloſus*) arboreſcens exſtipulatis foliis ovatis, petiolatis hirſutis. Lin. Sp. 736. *Tree Rock-roſe with oval leaves, whoſe foot-ſtalks are hairy.* Ciſtus mas major, folio rotundiore. J. B. 2. 2. *Greater male Ciſtus, or Rock-roſe, with a rounder leaf.*
2. CISTUS (*Incanus*) arboreſcens exſtipulatis foliis ſpatulatis tomentoſis rugoſis, inferioribus baſi vaginantibus connatis. Hort. Cliff. 205. *Tree Rock-roſe with ſpatule-ſhaped, woolly, rough leaves, which are joined at their baſe.* Ciſtus mas 2 folio longiore incano. J. B. 2. 2.
3. CISTUS (*Breviorifolius*) arboreſcens, foliis ovato-lanceolatis, baſi connatis, hirſutis, rugoſis, pedunculis florum longioribus. *Tree Rock-roſe with oval ſpear-ſhaped leaves, joined at their baſe, which are hairy and rough, and longer foot-ſtalks to the flowers.* Ciſtus mas folio breviore. C. B. P. 464.
4. CISTUS (*Luſitanicus*) arboreſcens, foliis ovatis, obtuſis, villoſis, ſubtus nervoſis rugoſis, floribus amplioribus. *Tree Rock-roſe, with oval, obtuſe, hairy leaves, which are nervous and rough on their under ſide, and larger flowers.* Ciſtus mas Luſitanicus, folio ampliſſimo incano. Tourn. Inſt. 259.
5. CISTUS (*Hiſpanicus*) arboreſcens villoſus, foliis lanceolatis, viridibus, baſi connatis, floribus ſeſſilibus, calycibus acutis. *Hairy-tree Rock-roſe with green ſpear-ſhaped leaves joined at their baſe, flowers ſittin cloſe, and ſharp-pointed empalements.*
6. CISTUS (*Ladaniferus*) arboreſcens exſtipulatus, foliis lanceolatis, ſuprà lævibus, petiolis baſi coalitis vaginantibus. Hort. Cliff. 205. *Tree Rock-roſe with ſpear-ſhaped leaves, ſmooth on their upper ſide, and their foot-ſtalks joining like ſheaths.* Ciſtus ladanifera Hiſpanica incana. C. B. P. 467.
7. CISTUS (*Albidus*) arboreſcens exſtipulatus foliis ovato-lanceolatis tomentoſis incanis, ſeſſilibus ſubtrinerviis. Sauv. Monſp. 150. *Tree Rock-roſe with oval, ſpear-ſhaped, woolly leaves, ſitting cloſe to the ſtalks.* Ciſtus mas folio oblongo incano. C. B. P. 464.
8. CISTUS (*Salviſolius*) arboreſcens exſtipulatus, foliis ovatis petiolatis utrinque hirſutis. Hort. Cliff. 205. *Rock-roſe with oval hairy leaves, having foot-ſtalks.* Ciſtus fœmina, folio ſalviæ, ſupina humiſparſa. C. B. P. 466.
9. CISTUS (*Creticus*) arboreſcens exſtipulatus, foliis ſpatulato-ovatis petiolatis enerviis ſcabris, calycinis lanceolatis. Lin. Sp. 738. *Tree Rock-roſe with oval ſpatule-ſhaped rough leaves without veins, having foot-ſtalks.* Ciſtus ladanifera Cretica flore purpureo. Tourn. Cor. 19. *Gum-bearing Ciſtus of Crete with a purple flower.*
10. CISTUS (*Oleæfolius*) fruticoſus, foliis lineari-lanceolatis, hirſutis, ſeſſilibus, floribus terminalibus. *Shrubby Rock-roſe with narrow, ſpear-ſhaped, hairy leaves, ſitting cloſe to the branches, and flowers terminating the ſtalks.* Ciſtus ledon foliis oleæ ſed anguſtioribus. C. B. P. 167.
11. CISTUS (*Laurifolius*) arboreſcens exſtipulatus foliis oblongo-ovatis petiolatis, trinerviis ſupra glabris. *Tree Rock-roſe with oblong oval leaves, having foot-ſtalks, ſmooth above, and the ſoot-ſtalks joined at their baſe.* Ciſtus ledon foliis laurinus. C. B. P. 476.
12. CISTUS (*Cordiſolius*) foliis oblongo-cordatis, glabris, petiolis longioribus, caule fruticoſo. *Rock-roſe with oblong, heart-ſhaped, ſmooth leaves, longer foot-ſtalks, and a ſhrubby ſtalk.*
13. CISTUS (*Monſpelienſis*) arboreſcens exſtipulatus, foliis lineari-lanceolatis, ſeſſilibus, utrinque villoſis, trinerviis. Hort. Cliff. 205. *Tree Rock-roſe with linear ſpear-ſhaped leaves ſitting cloſe to the branches, hairy on both ſides, having three nerves.* Ciſtus ladanifera Monſpelienſum. C. B. P. 467.
14. CISTUS (*Saliciſolius*) arboreſcens, foliis lineari-lanceolatis, ſubtus incanis, trinerviis, petalis ſubrotundis. *Tree Rock-roſe with narrow ſpear-ſhaped leaves, hoary on their under ſide, having three nerves with roundiſh petals.* Ciſtus ladanifera Hiſpanica, ſalicis folio, flore albo, maculâ punicante inſignito. Tourn. Inſt. R. H. 260. *Spaniſh Gum-bearing Ciſtus with white flowers ſpotted with purple.*
15. CISTUS (*Populifolius*) arboreſcens exſtipulatus, foliis cordatis lævibus acuminatis petiolatis. Hort. Cliff. 205. *Tree Rock-roſe with heart-ſhaped ſmooth leaves, having foot-ſtalks.* Ciſtus ledon foliis populi nigræ major. C. B. P. 467.
16. CISTUS (*Criſpus*) arboreſcens exſtipulatus, foliis lanceolatis pubeſcentibus trinerviis undulatis. Hort. Cliff. 206. *Rock-roſe with ſpear-ſhaped, hairy, waved leaves, having three veins.* Ciſtus mas, foliis chamædryos. C. B. P. 464.
17. CISTUS (*Halimifolius*) foliis ovatis, incanis, infernè petiolatis, ſupernè coalitis, caule fruticoſo. *Rock-roſe with oval hoary leaves, thoſe beneath having foot-ſtalks, and the upper ones joined at their baſe, and a ſhrubby ſtalk.* Ciſtus Halimi, folio 1. Cluſ. Hiſt. 1. p. 71. *Ciſtus with Sea Purſlane leaves.*
18. CISTUS (*Longiſolius*) foliis lineari-lanceolatis, incanis petiolatis, floribus racemoſis caule fruticoſo. *Rock-roſe with narrow ſpear-ſhaped leaves, having foot-ſtalks which are hoary, flowers growing in cluſters, and a ſhrubby ſtalk.* Ciſtus folio halimi longiore incano. J. B. 2. 5.

Theſe plants all grow naturally in the ſouth of France, in Spain, and Portugal, from whence their ſeeds have been brought to England, where moſt of the ſorts are now cultivated in the nurſeries for ſale. The firſt ſort hath a ſtrong woody ſtem, covered with a rough bark, which riſes three or four feet high, dividing into many branches, ſo as to form a large buſhy head; garniſhed with oval hairy leaves, placed oppoſite, and ſit cloſe to the branches, having ſeveral ſmaller leaves of the ſame form, riſing from the ſame joint. The flowers are produced at the end of the branches, four or five ſtanding together, almoſt in form of an umbel, but rarely more than one is open at the ſame time; theſe are compoſed of five large roundiſh petals of a purple colour, which ſpread open like a Roſe, having a great number of ſtamina, ſurrounding the oval germen in the center, terminated by ſmall, roundiſh, yellow ſummits; theſe flowers are but of ſhort duration, generally falling off the ſame day they expand; but there is a ſucceſſion of freſh flowers every day for a conſiderable time. After the flowers are paſt, the germen ſwells to an oval ſeed-veſſel, ſitting in the empalement, which is hairy; theſe capſules have ten cells, which are full of ſmall roundiſh ſeeds. This ſort flowers in May and June, and the ſeeds ripen in autumn; and there is generally more flowers produced in September and October, if the autumn proves favourable, and where the plants are protected from froſt, they frequently produce ſome flowers all the winter ſeaſon.

The ſecond ſort differs from the firſt in the ſhape of the leaves, which are longer and whiter; thoſe on the lower part of the branches are oval, and join at their baſe, ſurrounding the ſtalks, but the upper leaves are ſpear-ſhaped and diſtinct; the flowers are larger, and of a paler purple colour. This flowers and ripens ſeeds at the ſame time with the firſt.

The third ſort differs from both the former, in having ſhorter and greener leaves, which are joined at their baſe, and are hairy. The foot-ſtalks of the flowers are much longer, and the flowers are ſmaller, but of a deeper purple. This flowers and ſeeds at the ſame time with the two former, and the ſhrubs grow as large as the firſt ſort.

The fourth ſort hath much larger and rounder leaves than either of the former, which are hairy, and ſmooth on their upper ſide, but rough, and full of veins on their under; the branches are white, hairy, and the flowers are very large, and of a light purple colour. This flowers at the ſame time with the former.

The fifth ſort doth not riſe ſo high as either of the former, but ſends out branches near the root, which are hairy and erect, garniſhed with ſpear-ſhaped leaves, of a dark green colour, which join at their baſe,

baſe, ſurrounding the ſtalk. At each joint comes out a very ſlender branch, having three pair of ſmall leaves of the ſame ſhape with the other, terminated by a ſingle flower; the ends of the branches have three or four flowers ſitting cloſe without foot-ſtalks. The flowers are of a deep purple colour, and like thoſe of the firſt. This flowers at the ſame time with the other ſorts.

The ſixth ſort riſes to the height of five or ſix feet, with a ſtrong woody ſtalk, ſending out many hairy branches, garniſhed with ſpear-ſhaped leaves, ſmooth on their upper ſide, but veined on their under, having ſhort foot-ſtalks, which join at their baſe, where they form a ſort of ſheath to the branch. The flowers come out at the end of the branches, which are large, of a light purple colour, and reſembling thoſe of the fourth ſort.

The ſeventh ſort hath erect branches, which come out from the lower part of the ſtalk, and are woolly; garniſhed with oblong hoary leaves, covered with a white down, which are ſmooth above, but veined on their under ſide, joining at their baſe where they ſurround the ſtalk; the flowers are produced at the end of the branches, which are of a bright purple colour, and large. This flowers at the ſame time with the other ſorts.

The eighth ſort hath a ſlender ſmooth ſtalk, covered with a brown bark, which never riſes more than three feet high, ſending out many horizontal weak branches, which ſpread wide, garniſhed with ſmall oval leaves, which are hairy, ſtanding upon ſhort foot-ſtalks. The flowers come out at the wings of the leaves, upon long naked foot-ſtalks; theſe are white, and ſomewhat ſmaller than thoſe of the other ſorts. This flowers in June, July, and Auguſt.

The ninth ſort grows naturally in the iſlands of the Archipelago; this is the plant which produces the labdanum, as is hereafter mentioned; it riſes three or four feet high, with a woody ſtalk, ſending out many lateral branches, covered with a brown bark, garniſhed with oval, ſpear-ſhaped, hairy leaves, with waved borders; theſe in warm ſeaſons ſweat a glutinous liquid, which ſpreads on the ſurface of the leaves, is very clammy and ſweet ſcented. The flowers come out at the end of the branches, on ſhort hairy foot-ſtalks; they are of a deep purple colour, and about the ſize of a ſingle Roſe; theſe appear in June and July.

The tenth ſort riſes with a ſhrubby ſtalk about four feet high, the branches are very hairy, glutinous, grow erect, and are garniſhed with long, narrow, hairy leaves, ending in points, of a deep green on both ſides, having a deep longitudinal furrow on their upper ſide, made by the midrib, which is prominent, the flowers ſtand upon long foot-ſtalks at the end of the branches, which are of a pale ſulphur colour, having a bordered empalement, which is cut into five acute parts at the top. This flowers in June, July, and Auguſt, and the ſeeds ripen in autumn.

The eleventh ſort riſes with a ſtrong woody ſtem to the height of five or ſix feet, ſending out many erect branches, garniſhed with ſpear-ſhaped leaves ending in points; theſe are thick, white on their under ſide, of a dark green above, and very glutinous in warm weather. The flowers are produced at the end of the branches, upon long naked foot-ſtalks, which branch on their ſides into ſmall foot-ſtalks, each ſuſtaining one large white flower, having a hairy empalement. This ſort flowers in June and July.

The twelfth ſort riſes with a ſmooth ſhrubby ſtalk four or five feet high, ſending out many ſlender ligneous branches, covered with a ſmooth brown bark; garniſhed with oblong heart-ſhaped leaves, which are ſmooth, and have long foot-ſtalks. The flowers are produced at the end of the branches, ſtanding upon pretty long foot-ſtalks; they are white, and appear in June, July, and Auguſt, but rarely produce any ſeeds in England.

The thirteenth ſort riſes with a ſlender ſhrubby ſtalk, from three to four feet high, ſending out many branches from the bottom upward, which are hairy, garniſhed with ſpear-ſhaped leaves, of a very dark green colour, having three longitudinal veins in each, and in warm weather are covered with a glutinous ſweet-ſcented ſubſtance, which exſudes from their pores. The flower-ſtalks which come out at the end of the branches, are long, naked, and ſuſtain many white flowers, riſing above each other; their empalements are bordered, and end in ſharp points. This flowers at the ſame time with the laſt mentioned.

The fourteenth ſort riſes with a woody ſtem to the height of five or ſix feet, ſending out many ſide branches from the bottom, the whole length; theſe are ſmooth, covered with a reddiſh brown bark, garniſhed with narrow ſpear-ſhaped leaves, whitiſh on their under ſide, of a dark green above, having three longitudinal veins. The flowers are produced at the end of the branches, on ſhort foot-ſtalks, and are compoſed of five very large, roundiſh, white petals, each having a large purple ſpot at their baſe. The whole plant exſudes a ſweet glutinous ſubſtance in warm weather, which hath a very ſtrong balſamic ſcent, ſo as to perfume the circumambient air to a great diſtance. This flowers in June, July, and Auguſt.

There is a variety of this with white flowers, having no purple ſpots, which is in all other reſpects the ſame with this.

The fifteenth ſort hath a ſtiff, ſlender, woody ſtalk, which ſends out many branches the whole length, and riſes to the height of ſix or ſeven feet; the leaves are large, heart-ſhaped, and of a light green colour; theſe ſit cloſe to the branches, having many nerves; the flowers are produced at the end of the branches, upon naked foot-ſtalks; they are white, and ſoon drop off. This flowers in June and July, and is at preſent pretty rare in the Engliſh gardens.

The ſixteenth ſort hath weak, ſlender, woody branches, which ſpread horizontally, ſo ſeldom riſe more than two or three feet high, garniſhed with ſpear-ſhaped hairy leaves, which are indented on their edges, and have three longitudinal veins running through them; the flowers are white, coming out upon naked foot-ſtalks from the wings of the leaves; theſe are ſucceeded by roundiſh blunt ſeed-veſſels, having ſeveral cells, filled with angular ſeeds. This flowers in June and July, and the ſeeds ripen in Auguſt and September.

The ſeventeenth ſort hath an upright ſhrubby ſtalk, which riſes four or five feet high, ſending out many branches from the ground upward, ſo as to form a large buſh. The branches are channelled and hoary. The leaves are oval, ſtanding oppoſite; thoſe on the lower part of the branches have foot-ſtalks, but upward they coaleſce at their baſe, and ſurround the ſtalk; they are very white. The foot-ſtalks of the flowers which riſe at the end of the branches, are a foot in length, naked, hairy, and put out two or four ſhorter foot-ſtalks on the ſide, each ſupporting three or four flowers. The flowers are large, of a bright yellow colour, but of ſhort duration; their empalements are hairy, and ſharp-pointed. This flowers in June and July, and at preſent is but in few Engliſh gardens.

The eighteenth ſort hath been long preſerved in the Engliſh gardens; this riſes with a ſlender woody ſtalk three or four feet high, ſending out many ſlender branches, garniſhed with narrow, ſpear-ſhaped, hoary, waved leaves; from the wings of the leaves come out ſlender branches, which have two or three pair of ſmall leaves, terminated by looſe bunches of flowers, each ſtanding on a ſlender foot-ſtalk. The flowers are of a dirty ſulphur colour, and appear in June and July, but are never ſucceeded by ſeeds in this country.

This ſort will not live abroad in the winter, ſo is always placed in a green-houſe, where, by its hoary leaves, which continue all the year, it makes a variety.

All

All the various kinds of Ciſtus are very great ornaments to a garden; their flowers are produced in great plenty, which though but of a ſhort duration, yet are ſucceeded by freſh ones almoſt every day for above two months ſucceſſively; theſe flowers are many of them about the bigneſs of a middling Roſe, but ſingle, and of different colours; the plants continue their leaves all the year.

Theſe plants are all of them, except the laſt, hardy enough to live in the open air in England, unleſs in very ſevere winters, which often deſtroys many of them, ſo that a plant or two of each ſort may be kept in pots, and ſheltered in winter, to preſerve the kinds; the reſt may be intermixed with other ſhrubs, where they will make a pretty diverſity; and in ſuch places where they are ſheltered by other plants, they will endure the cold much better than where they are ſcattered ſingly in the borders. Many of theſe plants will grow to the height of five or ſix feet, and will have large ſpreading heads, provided they are permitted to grow uncut; but if they are ever trimmed, it ſhould be only ſo much as to prevent their heads from growing too large for their ſtems; for whenever this happens, they are apt to fall on the ground, and appear unſightly.

Theſe ſhrubs are propagated by ſeeds, and alſo from cuttings; but the latter method is ſeldom practiſed, unleſs for thoſe ſorts which do not produce ſeeds in England; theſe are the twelfth, ſeventeenth, and eighteenth ſorts; all the others generally produce plenty of ſeeds, eſpecially thoſe plants which came from ſeeds; for thoſe which are propagated by cuttings, are very ſubject to become barren, which is alſo common to many other plants.

The ſeeds of theſe plants may be ſown in the ſpring upon a common border of light earth, where the plants will come up in ſix or ſeven weeks, and, if they are kept clear from weeds, and thinned where they are too cloſe, they will grow eight or ten inches high the ſame year; but as theſe plants, when young, are liable to injury from hard froſt, therefore they ſhould be tranſplanted when they are about an inch high, ſome into ſmall pots filled with light earth, that they may be removed into ſhelter in winter, and the others into a warm border, at about ſix inches diſtance each way; thoſe which are potted, muſt be ſet in a ſhady ſituation till they have taken new root; and thoſe planted in the border muſt be ſhaded every day with mats till they are rooted, after which the latter will require no other care but to keep them clean from weeds till autumn, when they ſhould have hoops placed over them, that they may be covered in froſty weather; thoſe in the pots may be removed into an open ſituation, ſo ſoon as they have taken new root, where they may remain till the end of October, but during the ſummer they muſt be ſhifted into larger pots, and be frequently watered; the end of October they ſhould be placed under a hot-bed frame to ſcreen them from the cold in winter, but, at all times, when the weather is mild, they ſhould be fully expoſed to the open air, and only covered in froſts: with this management, the plants will thrive much better than when they are more tenderly treated.

The above method is what the gardeners generally practiſe; but thoſe who are deſirous to have their plants come forward, ſhould ſow the ſeeds on a moderate hot-bed in the ſpring, which will bring up the plants very ſoon; but theſe muſt have plenty of air when they appear, otherwiſe they will draw up very weak; when the plants are fit to remove, they ſhould be each planted into a ſeparate ſmall pot, and plunged into a very moderate hot-bed, obſerving to ſhade them till they have taken freſh root; then they muſt have plenty of air admitted to them every day in good weather, to prevent their drawing up weak; and by degrees they muſt be hardened, ſo as to be removed into the open air the beginning of June, and then they may be treated in the ſame manner as is before directed for the other ſeedling plants. By the bringing of the plants forward in the ſpring in this method, they will grow to the height of two feet, or more, the firſt ſummer, and have many lateral branches, ſo will be ſtrong enough to plant abroad the following ſpring, and moſt of them will flower the ſame ſummer; whereas thoſe which are ſown in the full ground, rarely flower till the year after; nor will they be ſo ſtrong, or capable to reſiſt the cold of the ſecond winter, as thoſe which have been brought forward.

In the ſpring following, theſe plants may be turned out of the pots, with all the earth preſerved to their roots, and planted in the places where they are to remain (for they are bad plants to remove when grown old,) obſerving to give them now and then a little water, until they have taken freſh root; after which time, they will require no farther care than to train them upright in the manner you would have them grow; but thoſe plants which were at firſt planted into a border in the open ground, ſhould be arched over, and covered with mats in froſty weather, during the firſt winter, but may be tranſplanted abroad the ſucceeding ſpring. In removing of theſe plants, you ſhould be careful to preſerve as much earth about the roots as you can; and if the ſeaſon ſhould prove hot and dry, you muſt water and ſhade them until they have taken freſh root, after which they will require no other culture than was before directed.

Theſe plants may alſo be propagated by cuttings, which ſhould be planted in May or June, upon a bed of light earth, keeping them ſhaded with mats, and frequently refreſhed with water, until they have taken root; which will be in about two months time, when you may tranſplant them into pots filled with good freſh light earth, and they ſhould be ſet in a ſhady place until they have taken root, then they may be expoſed to the open ſun until October, when you ſhould remove them into ſhelter the firſt winter; but the ſucceeding ſpring you may plant them abroad, as was before directed for the ſeedling plants.

The fourteenth and fifteenth ſorts are by much the moſt beautiful of all theſe Ciſtus's; the flowers, which are as big as a large Roſe, are of a fine white, with a deep purple ſpot on the bottom of each leaf. Theſe plants alſo abound with a ſweet glutinous liquor, which exſudes through the pores of the leaves in ſo plentiful a manner in hot weather, that the ſurfaces of the leaves are covered therewith; from this plant Cluſius thinks might be gathered great quantities of the ladanum which is uſed in medicine, in the woods in Spain, where he ſaw vaſt quantities of this ſhrub growing.

But it is from the ninth ſort, which Monſ. Tournefort ſays, the Greeks, in the Archipelago, gather this ſweet gum; in the doing of which (Bellonius ſays) they make uſe of an inſtrument like a rake without teeth, which they call ergaſtiri; to this are tied many thongs of raw and untanned leather, which they rub gently on the buſhes that produce ladanum, ſo that the liquid moiſture may ſtick upon the thongs, after which they ſcrape it off with knives; this is done in the hotteſt time of the day, for which reaſon the labour of gathering this ladanum is exceſſive, and almoſt intolerable, ſince they are obliged to remain on the mountains for whole days together, in the very heat of ſummer, or the dog days; nor is there any perſon almoſt that will undertake this labour, except the Greek monks.

Monſ. Tournefort alſo relates the ſame in his travels, where he ſays, that the ſhrubs which produce the ladanum grow upon dry ſandy hillocks; and that he obſerved ſeveral country fellows in their ſhirts and drawers, that were bruſhing the ſhrubs with their whips; the ſtraps whereof, by being drawn over the leaves of the plant, licked up a ſort of odoriferous balſam ſticking upon the leaves, which he ſuppoſes to be part of the nutritious juice of the plant, which exſudes through the pores of the leaves, where it remains like a fattiſh dew, in ſhining drops as clear as turpentine.

When the whips are ſufficiently laden with this greaſe, they take a knife, and ſcrape it clean off the ſtraps, and make it up into a maſs of cakes of different ſizes; this is what comes to us under the name of ladanum, or labdanum. A man that is diligent, will gather three pounds two ounces per day, or more, which they ſell for a crown on the ſpot; this work is rather unpleaſant than laborious, becauſe it muſt be done in the hotteſt time of the day, and in the greateſt calm; and yet the pureſt ladanum is not free from filth, becauſe the winds of the preceding days have blown duſt upon theſe ſhrubs, which, by the glewy ſubſtance upon the ſurfaces of the leaves, is thereby detained and mixed therewith. But to add weight to this drug, they knead it up with a very fine blackiſh ſand, which is found in thoſe parts, as if nature herſelf was minded to teach them how to adulterate this commodity. It is no eaſy thing to diſcover this cheat, when the ſand has been well blended with the ladanum; in order to which you muſt chew it for ſome time, to find whether it crackles between the teeth, and if it doth, you muſt firſt diſſolve it, and then ſtrain it, in order to purify away what has been added to it.

CITHAREXYLUM. Lin. Gen. Plant. 678. Fiddle-wood.

The CHARACTERS are,

The empalement of the flower is bell-ſhaped, of one leaf, indented in five parts. The flower is of one leaf, funnel-ſhaped, divided at the top into five equal parts, which ſpread open. It hath four ſtamina which adhere to the tube, two of them being longer than the other, terminated by oblong ſummits with two lobes. In the center is ſituated the roundiſh germen, ſupporting a ſlender ſtyle, crowned by an obtuſe double-headed ſtigma. The germen afterward becomes a capſule with two cells, each having a ſingle ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia; the plants of this ſection have two long, and two ſhort ſtamina, and the ſeeds are included in a capſule.

The SPECIES are,

1. CITHAREXYLUM (*Cinereum*) ramis angulatis, foliis ovato-lanceolatis venis candicantibus. *Fiddle-wood with angular branches, and oval ſpear-ſhaped leaves, having white veins.* Citharexylum arbor laurifolia Americana, foliorum venis latis candicantibus. Pluk. Almag. 108. *Fiddle-wood with oval ſpear-ſhaped leaves, which are veined, indented, and placed by threes, angular branches, and flowers growing in looſe bunches. This is the common Fiddle-wood of America.*

2. CITHAREXYLUM (*Album*) foliis oblongo-ovatis, integris, oppoſitis, ramis angulatis, floribus ſpicatis. *Fiddle-wood with oblong, oval, entire leaves growing oppoſite, angular branches, and flowers growing in ſpikes.* Berberis fructu arbor maxima baccifera, racemoſa, foliis integris obtuſis, flore albo pentapetalo odoratiſſimo, fructu nigro monopyreno. Sloan. Cat. Jam. 170. *Fiddle-wood, or Fidelle-wood.*

The firſt ſort grows common in moſt of the iſlands in the Weſt-Indies, where it riſes to a great height, and becomes a very large timber-tree; the wood of which is greatly eſteemed for buildings, being very durable.

This hath an upright trunk fifty or ſixty feet high, ſending out branches on every ſide, which have ſeveral angles, or ribs, running longitudinally, garniſhed by three oval ſpear-ſhaped leaves at every joint, ſtanding in a triangle, upon ſhort foot-ſtalks. The leaves are about four inches long, and one or two broad, of a lively green colour, pretty much notched on their edges, having ſeveral deep veins running from the midrib to the edges, which are of a white colour on their upper ſide, and very prominent on their under. The flowers come out from the ſides, and alſo at the end of the branches, in looſe bunches, which are ſucceeded by ſmall pulpy berries, incloſing two ſeeds in each.

The ſecond ſort is a native of the ſame iſlands with the firſt. This is alſo a very large tree, whoſe timber is greatly valued in America, for buildings, being very durable; and from thence I have been informed the French gave it the title of Fidelle-wood, which the Engliſh have rendered Fiddle-wood; and ſome have ſuppoſed that the wood was uſed for making thoſe muſical inſtruments, which is a great miſtake.

This tree riſes with a ſtrong upright trunk to the height of ſixty feet or more, ſending out many angular branches, ſtanding oppoſite, which are covered with a looſe whitiſh bark, (from whence the inhabitants give it the name of white Fiddle-wood,) garniſhed with oval oblong leaves, ſtanding oppoſite, on ſhort foot-ſtalks; theſe are of a lucid green, and are rounded at their ends. The flowers come out in long looſe ſpikes, toward the end of the branches, which are white, and ſmell very ſweet; theſe are followed by ſmall, roundiſh, pulpy berries, each incloſing a ſingle ſeed.

The firſt ſort hath been long preſerved in ſome of the curious gardens in England, for the ſake of variety. The leaves continuing through the year, and being of a fine green colour, make a pretty variety in the ſtove during the winter ſeaſon: this may be propagated either by ſeeds, or cuttings; the latter is the uſual method in England, where the ſeeds are not produced; but when ſeeds can be obtained from abroad, the plants which riſe from them are much better than thoſe raiſed from cuttings.

The ſeeds of this ſort ſhould be ſown in ſmall pots early in the ſpring, and plunged into a freſh hot-bed of tanners bark, and treated in the ſame manner as other exotic ſeeds, which are brought from hot countries. If the ſeeds are freſh, the plants will appear in ſix or ſeven weeks, and in about one month more will be fit to tranſplant; when this is done, the plants ſhould be carefully ſeparated, ſo as not to tear, or break off their roots, and each planted in a ſmall pot filled with light freſh earth, and plunged into the hot-bed again, obſerving to ſhade them till they have taken freſh root; after which they ſhould have a large ſhare of air admitted to them in warm weather, and muſt be frequently watered; in autumn the plants ſhould be removed into the bark-ſtove, where it will be proper to keep them the firſt winter, till they have obtained ſtrength; then they may be afterward kept in a dry ſtove in winter, and in the middle of ſummer they may be expoſed in the open air for two or three months, in a warm ſituation, with which management the plants will make better progreſs than when they are more tenderly treated.

If the cuttings of theſe plants are planted in ſmall pots during the ſummer months, and plunged into a moderate hot-bed, they will take root, and may afterward be treated in the ſame manner as the ſeedling plants.

The ſeeds of the ſecond ſort were ſent me by William Williams, Eſq; from Jamaica, which have ſucceeded in the phyſic garden at Chelſea; but as the plants have not yet flowered, I can give no other account of them, than what is before-mentioned; however, they ſeem to be full as hardy as thoſe of the firſt ſort, and make full as great progreſs. The leaves of this ſort continue all the year, and having a gloſſy green colour, make a pretty appearance in the winter ſeaſon.

CITRUS. Lin. Gen. Plant. 807. Citreum. Tourn. Inſt. R. H. 620. tab. 395, 396. The Citron-tree.

The CHARACTERS are,

The empalement of the flower is of one leaf, indented in five parts. The flower hath five oblong, thick petals, which ſpread open, and are a little concave; it hath ten ſtamina, which are not equal, and join in three bodies at their baſe, terminated by oblong ſummits. The oval germen in the center ſupports a cylindrical ſtyle, crowned by a globular ſtigma; the germen afterward becomes an oblong fruit, with a thick fleſhy ſkin filled with a ſucculent pulp, having many cells, each containing two oval hard ſeeds.

Dr. Linnæus has joined the Aurantium and Limon to this genus, making them only different ſpecies of the ſame genus; but all the varieties of Citron which

I have

I have examined, have but ten ſtamina in their flowers, whereas thoſe of the Orange have more, ſo that theſe may be ſeparated on that difference; but Tournefort adds, as a diſtinguiſhing character to this genus, the appendix which grows to the foot-ſtalk of the leaf. However, I ſhall not ſo cloſely follow Linnæus, in joining thoſe things together, which have by all the writers on botany and gardening been kept ſeparate, leſt I ſhould render this work unintelligible to thoſe who have not made botany their ſtudy.

The SPECIES are,

1. CITRUS (*Medica*) fructu oblongo, majori, mucronato, cortice craſſo rugoſo. *Citron with a larger, oblong, pointed fruit, having a thick rough rind.* Malum Citreum dulci medulla. Fer. Heſp. 72. *The Sweet Citron.*
2. CITRUS (*Tuberoſa*) fructu oblongo, cortice tuberoſa rugoſo. *Citron with an oblong fruit, having a rough knobbed rind.* Malum Citreum vulgare. Fer. Heſp. 57. *The common Citron.*

There are ſeveral varieties of this fruit, with which the Engliſh gardens have been ſupplied from Genoa, where is the great nurſery for the ſeveral parts of Europe for this ſort, as alſo Orange and Lemon-trees; and the gardeners who cultivate them there, are as fond of introducing a new variety to their collection, as the nurſery-men in England are of a new Pear, Apple, Peach, &c. ſo that the varieties being annually increaſed, as are many of our fruits from ſeeds, there is like to be no end of the vatiety of theſe, nor of the Orange and Lemon-trees.

The fruit of the Citron is ſeldom eaten raw, as thoſe of the Orange, but they are generally preſerved, and made into ſweetmeats, which are by ſome perſons greatly eſteemed; and as theſe are kept till winter and ſpring, when there is a ſcarcity of fruit for furniſhing out the deſert, they are the more valuable; but unleſs the ſeaſons are warm, and the trees are well managed, the fruit rarely ripens in England. Some of the faireſt fruit which I have ſeen growing in England, were in the gardens of his late grace the Duke of Argyle, at Whitton, where the trees were trained againſt a ſouth wall, through which there are flues contrived for warming the air in winter, and glaſs-covers to put over them when the weather begins to be cold. In this place the fruit were as large, and perfectly ripe, as they are in Italy or Spain.

The ſeveral ſorts of Citrons are cultivated much in the ſame manner as the Orange-tree, to which I ſhall refer the reader, to avoid repetition; but ſhall only remark, that theſe are ſomewhat tenderer than the Orange, and ſhould therefore have a warmer ſituation in winter, otherwiſe they are very ſubject to caſt their fruit. They ſhould alſo continue a little longer in the houſe in the ſpring, and be carried in again ſooner in the autumn; as alſo have a warmer and better defended ſituation in the ſummer, though not too much expoſed to the ſun in the heat of the day.

And as their leaves are larger, and their ſhoots ſtronger, than thoſe of the Orange, they require a little more water in the ſummer; but in winter they ſhould have but little water at each time, which muſt be the oftener repeated. The ſoil ought to be much the ſame as for the Orange-tree, but not quite ſo ſtrong.

The common Citron is much the beſt ſtock to bud any of the Orange or Lemon kinds upon, it being the ſtraiteſt and freeſt growing tree. The rind is ſmoother, and the wood leſs knotty, than either the Orange or Lemon; and will take either ſort full as well as its own kind, which is what none of the other ſorts will do: and theſe ſtocks, if rightly managed, will be very ſtrong the ſecond year after ſowing, capable to receive any buds, and will have ſtrength to force them out vigorouſly; whereas it often happens, when theſe buds are inoculated into weak ſtocks, they frequently die, or remain till the ſecond year before they put out; and thoſe that ſhoot the next ſpring after budding, are oftentimes ſo weak as hardly to be fit to remain, being incapable to make a ſtrait handſome ſtem, which is the great beauty of theſe trees.

CITRUL. See PEPO.

CLARY. See SCLAREA.

CLAYTONIA. Gron. Flor. Virg. Lin. Gen. Plant. 253.

The CHARACTERS are,

The flower hath a two-leaved oval empalement, with a tranſverſe baſe: it hath five oblong oval petals, which are indented at the top, and five awl-ſhaped recurved ſtamina, which are ſhorter than the petals, terminated by oblong ſummits. In the center is ſituated an oval germen, ſupporting a ſingle ſtyle, crowned by a triſid ſtigma. The germen afterward becomes a roundiſh capſule, having three cells, opening with three elaſtic valves, and filled with round ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and but one ſtyle.

The SPECIES are,

1. CLAYTONIA (*Virginica*) foliis linearibus. Lin. Sp. Plant. 294. *Claytonia with very narrow leaves.* Ornithogalo affinis Virginiana, flore purpureo pentapetaloide. Pluk. Alm. 272.
2. CLAYTONIA (*Siberica*) foliis ovatis. Lin. Sp. Plant. 294. *Claytonia with oval leaves.* Limnia. Act. Stockh. 1746.

The firſt ſort grows naturally in Virginia, from whence it was ſent by Mr. Clayton to England, and received its title from him.

It hath a ſmall tuberous root, which ſends out low ſlender ſtalks in the ſpring, about three inches high, which have each two or three ſucculent narrow leaves about two inches long, of a deep green colour. At the top of the ſtalk are four or five flowers produced, ſtanding in a looſe bunch; theſe are compoſed of five white petals which ſpread open, and are ſpotted with red on their inſide; after theſe fall away, the germen becomes a roundiſh capſule divided into three cells, which are filled with roundiſh ſeeds. The flowers appear in April, and the ſeeds ripen in June, ſoon after which the plant decays to the root.

The ſecond ſort grows naturally in Siberia. This is a low plant, ſeldom riſing more than two or three inches high; the root is tuberous, ſending out three or four oval leaves; the foot-ſtalk of the flower ariſes immediately from the root, ſuſtaining two or three ſmall white flowers of the ſame ſhape with thoſe of the firſt ſort, ſo make but little figure in a garden.

The plants are both propagated by ſeeds, and alſo from offſets ſent out from the roots: the ſeeds ſhould be ſown upon a ſhady border of light earth, or in pots filled with the like mould, ſoon after they are ripe; for if they are kept out of the ground till ſpring, the plants will not come up till the next year; whereas thoſe which are ſown early in the autumn, will grow the following ſpring, ſo that a whole year is gained. When the plants come up, they will require no other care but to keep them clean from weeds; and in the autumn, if ſome old tanners bark is ſpread over the ſurface of the ground, it will ſecure the roots from being injured by froſt; which, if it ſhould prove very ſevere, might injure the young plants, but in mild winters they will not require protection.

The beſt time to tranſplant the roots is about Michaelmas, when they are inactive; but as they are ſmall, if great care is not taken in opening the ground, the roots may be buried and loſt; for they are of a dark colour, ſo are not eaſily diſtinguiſhed from the ground.

CLAVICLE [Claviculus, *Lat.*] a claſper or tendril.

CLEMATIS. Lin. Gen. Plant. 616. Clematitis. C. B. P. 300. [Κληματὶς, of Κλῆμα, a twig or claſper, &c. becauſe it climbs up trees with claſpers, like thoſe of Vines. Hence it is called Virgultum ductile, Ranunculus obſequioſus; and alſo Antrogenomene, and Flammula, as though producing a carbuncle; for the leaves being bruiſed, and applied to the ſkin, burn it into carbuncles, as it is in the peſtilence;

ſence; and Flammula, becauſe if one leaf be cropped in a hot day in the ſummer ſeaſon, and bruiſed, and preſently put to the noſtrils, it will cauſe a ſmell and pain like a flame.] Virgin's Bower.

The CHARACTERS are,

The flowers have no empalement; they have each four looſe oblong petals, with a great number of ſtamina, which are ſhorter than the petals, and the ſummits adhere to their ſide. They have many germen, which are roundiſh and compreſſed; the awl-ſhaped ſtyle, which is longer than the ſtamina, is crowned by a ſingle ſtigma. The germina afterward become ſo many roundiſh compreſſed ſeeds, with the ſtyle ſitting on their top, and are collected into a head, the ſtyles of the ſeveral ſpecies being of various forms.

This genus of plants is ranged in the ſeventh ſection of Linnæus's thirteenth claſs, intitled Polyandria Polygynia, the flowers of this ſection having many ſtamina and ſeveral ſtyles.

The SPECIES are,

1. CLEMATIS (*Recta*) foliis pinnatis, foliolis ovato-lanceolatis, integerrimis, caule erecto. Hort. Cliff. 225. *Clematis with winged leaves, whoſe lobes are oval, ſpear-ſhaped, entire, and an upright ſtalk.* Clematitis ſive flammula ſurrecta alba. J. B. 2. 127. *Upright white Climber.*
2. CLEMATIS (*Integrifolia*) foliis ſimplicibus, ovato-lanceolatis. Hort. Cliff. 225. *Clematis with ſingle leaves, which are oval and ſpear-ſhaped.* Clematitis cærulea erecta. C. B. P. 300. *Upright blue Climber.*
3. CLEMATIS (*Hiſpanica*) foliis pinnatis, foliolis lanceolatis, acutis, integerrimis, caule erecto. *Clematis with winged leaves, whoſe lobes are ſpear-ſhaped, pointed, and entire, and an upright ſtalk.* Clematitis Hiſpanica ſurrecta altera & humilior flore albicante. H. R. Par.
4. CLEMATIS (*Vitalba*) foliis pinnatis, foliolis cordatis, ſcandentibus. Hort. Cliff. 225. *Clematis with winged leaves, whoſe lobes are heart-ſhaped and climbing.* Clematitis latifolia integra. J. B. 2. p. 125. *Climber with broad entire leaves, commonly called Viorna, or Traveller's Joy.*
5. CLEMATIS (*Canadenſis*) foliis ternatis, foliolis cordatis, acutis, dentatis, ſcandentibus. *Clematis with trifoliate, heart-ſhaped, pointed leaves, which are indented, and climbing.* Clematitis Canadenſis latifolia & triphylla. Sar. *Broad-leaved Canada Climber.*
6. CLEMATIS (*Flammula*) foliis inferioribus, pinnatis, laciniatis, ſummis ſimplicibus, integerrimis, lanceolatis. Hort. Cliff. 225. *Clematis whoſe lower leaves are winged and jagged, and the upper ones ſingle, ſpear-ſhaped, and entire.* Clematitis ſive flammula repens. C. B. P. 300. *Creeping Climber.*
7. CLEMATIS (*Cirrhoſa*) cirrhis ſcandens foliis ſimplicibus. Hort. Cliff. 226. *Clematis with climbing tendrils, and ſimple leaves.* Clematitis peregrina, foliis pyri inciſis. C. B. P. 300. *Foreign Climber with cut Pear-ſhaped leaves.*
8. CLEMATIS (*Viticella*) foliis compoſitis decompoſitiſque, foliolis ovatis, integerrimis. Hort. Cliff. 225. *Clematis with compound and decompounded leaves, whoſe ſmall leaves are oval and entire.* Clematitis cærulea vel purpurea repens. C. B. P. 300. *Single blue Virgin's Bower.*
9. CLEMATIS (*Alpina*) foliis compoſitis ternatis ternatiſque, foliolis acutis ſerratis. *Clematis with compound leaves, whoſe lobes are ſharply ſawed.* Clematitis Alpina geranii folio. C. B. P. 300. *Alpine Climber with a Crane's-bill leaf.*
10. CLEMATIS (*Viorna*) foliis compoſitis decompoſitiſque, foliolis quibuſdam trifidis. Flor. Virg. 62. *Clematis with compound and decompounded leaves, ſome of whoſe lobes are trifid.* Clematis purpurea repens, petalis florum coriaceis. Raii Hiſt. 1928. *Creeping purple Climber, with coriaceous petals to the flower.*
11. CLEMATIS (*Orientalis*) foliis compoſitis, foliolis inciſis angulatis lobatis cuneiformibus, petalis interne villoſis. Lin. Sp. 765. *Clematis with compound leaves, whoſe ſmall leaves are cut into angular wedge-ſhaped lobes, and the inſide of the petals are hairy.* Clematitis Orientalis folio apii, flore ex viridi flaveſcente, poſteriùs reflexo. Tourn. Cor. 20. *Eaſtern Climber with a Smallage leaf, and a reflexed, greeniſh, yellow flower.*
12. CLEMATIS (*Sibirica*) foliis compoſitis & decompoſitis, foliolis ternatis, ſerratis. Gmel. *Climber with compound and decompounded leaves, whoſe ſmall leaves are ſawed and trifoliate.*
13. CLEMATIS (*Dioica*) foliis ternatis, integerrimis, floribus diocis. *Three-leaved Climber, with entire leaves, having three lobes, and male and female flowers on the ſame plant.* Clematis foliis ternis. Sloan. Cat. 84. *Three-leaved Climber.*
14. CLEMATIS (*Americana*) foliis ternatis, foliolis cordato-acuminatis, integerrimis, floribus corymboſis. *Three-leaved Climber with heart-ſhaped pointed lobes, which are entire, and flowers collected in round bunches.* Clematitis Americana triphylla, foliis non dentatis. Houſt. MSS.
15. CLEMATIS (*Criſpa*) foliis ſimplicibus, ternatiſque, foliolis integris trilobiſve. Lin. Sp. Plant. 543. *Climber with ſingle and trifoliate leaves, whoſe ſmall leaves are either entire, or have three lobes.* Clematis flore criſpo. Hort. Elth. 86. *Climber with a curled flower.*

The firſt ſort grows naturally in the ſouth of France, Italy, Auſtria, and ſeveral parts of Germany, but hath been long cultivated in the Engliſh gardens for ornament. This hath a perennial root. The ſtalks are upright, about three or four feet high, garniſhed with winged leaves ſtanding oppoſite, which are compoſed of three or four pair of lobes, terminated by an odd one; they are oval, ſpear-ſhaped, and entire: the flowers are produced in large looſe panicles at the top of the ſtalks; theſe are compoſed of four white petals, which ſpread open; and the middle is occupied by a great number of ſtamina, ſurrounding five or ſix germen, which afterward become ſo many compreſſed ſeeds, each having a long tail or beard ſitting on the top. It flowers in June, and the ſeeds ripen in September.

The ſecond ſort grows naturally in Hungary and Tartary, but hath been long an inhabitant in the Engliſh gardens. The root of this is perennial, ſending up many ſlender upright ſtalks, from three to four feet high, garniſhed with oppoſite ſingle leaves at each joint, having ſhort foot-ſtalks; the leaves are near four inches long, and an inch and an half broad in the middle, of a bright green, ſmooth, and entire, ending in a point: the flowers come out from the upper part of the ſtalks, ſtanding upon very long naked foot-ſtalks, each ſupporting a ſingle blue flower, compoſed of four narrow thick petals which ſpread open, and many hairy ſtamina ſurrounding the germina in the center. After the flowers are paſt, the germen become ſo many compreſſed ſeeds, each having a tail or beard. It flowers and ſeeds at the ſame time with the former ſort.

The third ſort is very like the firſt, from which it differs in having but two or three pair of lobes in each leaf, which are narrower and ſtand farther aſunder: the ſtalks are ſhorter, and the flowers larger.

The fourth ſort grows naturally in the hedges, in moſt parts of England. This hath a tough climbing ſtalk, ſending out claſpers, by which it faſtens to the neighbouring buſhes and trees, and ſometimes riſes more than twenty feet high, ſending out many ſide branches, ſo as often to cover all the trees and buſhes of the hedge. This puts out many bunches of white flowers in June, which are ſucceeded by ſeveral flat ſeeds joined in a head, each having a long twiſted tail ſitting on the top, which is covered with long white hairs; and in autumn, when the ſeeds are near ripe, they appear like beards, from whence the country people call it Old Man's Beard. The branches of this being very tough and flexible, are uſed for tying up faggots; from whence, in ſome countries, it is called Bindwith.

There are two varieties of this, one with indented leaves, which is the moſt common, and the other hath entire leaves; but as theſe are ſuppoſed to ariſe accidentally from ſeeds, they are not diſtinguiſhed by later botaniſts.

The

The fifth ſort grows naturally in moſt parts of North America, from whence the ſeeds have been brought to Europe. This is in its firſt appearance very like the laſt ſort, but the leaves are broader, and grow by threes on the ſame foot-ſtalk, whereas thoſe of the former have five or ſeven lobes in each leaf. The flowers appear at the ſame time with the former, but the ſeeds do not ripen in England, unleſs the ſeaſon is very warm. There is little beauty in this ſort.

The ſixth ſort hath a climbing ſtalk like the fourth; the lower leaves of this are winged, and deeply cut on their edges, but the upper leaves are ſingle, ſpear-ſhaped, and entire. The flowers of this ſort are white, and appear in June or July. This grows naturally in the ſouth of France, and in Italy.

The ſeventh ſort grows naturally in Spain and Portugal. This hath a climbing ſtalk, which will riſe to the height of eight or ten feet, ſending out branches from every joint, whereby it becomes a very thick buſhy plant; the leaves are ſometimes ſingle, at other times double, and frequently trifoliate, being indented on their edges. Theſe keep their verdure all the year: oppoſite to the leaves come out claſpers, which faſten themſelves to the neighbouring ſhrubs, by which the branches are ſupported, otherwiſe they would fall to the ground. The flowers are produced from the ſide of the branches; theſe are large, of an herbaceous colour, and appear always about the end of December, or beginning of January, which being a ſeaſon when few perſons viſit gardens for information, theſe flowers have eſcaped their notice, ſo that many have ſuppoſed this ſort doth not produce flowers in England; and the flowers being nearly the ſame colour of the leaves, thoſe who have been more conſtant viſitors of gardens, have paſſed by this plant, without noticing the flowers; but for many years together, it hath produced plenty of flowers in the garden at Chelſea, and always at the ſame ſeaſon.

The ſeventh ſort is cultivated in the nurſery-gardens for ſale, and is known by the title of Virgin's Bower. There are four varieties of it which are preſerved in the gardens of the curious, and have been by ſome treated as ſo many diſtinct ſpecies; but as their only differences conſiſt either in the colour of their flowers, or the multiplicity of their petals, they are now only eſteemed as ſeminal variations; but as they are diſtinguiſhed by the nurſery-gardeners, I ſhall juſt mention them.

1. Single blue Virgin's Bower.
2. Single purple Virgin's Bower.
3. Single red Virgin's Bower.
4. Double purple Virgin's Bower.

Theſe have no difference in their ſtalks or leaves, ſo that the ſame deſcription will fit them all, excepting the colours or multiplicity of petals in their flowers.

The ſtalks of theſe plants are very ſlender and weak, having many joints, from whence come out ſide branches, which are again divided into ſmaller. If theſe are ſupported, they will riſe to the height of eight or ten feet, and are garniſhed with compound winged leaves, placed oppoſite at the joints. Theſe branch out into many diviſions, each of which hath a ſlender foot-ſtalk, with three ſmall leaves, which are oval and entire: from the ſame joint, generally four foot-ſtalks ariſe, two on each ſide; the two lower have three of theſe diviſions, ſo that they are each compoſed of nine ſmall leaves or lobes; but the two upper have only two oppoſite leaves on each, and between theſe ariſe three ſlender foot-ſtalks, each ſupporting one flower. The flowers have each four petals, which are narrow at their baſe, but are broad at the top and rounded: in one they are of a dark worn-out purple, in another blue, and the third of a bright purple or red colour. The double ſort, which is common in the Engliſh gardens, is of the worn-out purple colour: but the foreign catalogues mention double flowers of both the other colours, which may probably be found in ſome of their gardens; but as I have not ſeen them myſelf, I have not noticed them. The double flowers have no ſtamina or germen, but in lieu of them, there is a multiplicity of petals, which are narrow, and turn inward at the top.

Theſe plants grow naturally in the woods in Spain and Portugal, but have been long cultivated in the Engliſh gardens for ornament. They flower in June and July, but they ſeldom ripen ſeeds in England, and the double ſort continues to the end of Auguſt.

The ninth ſort grows naturally on the Alps, and other mountains in Italy. I received it from mount Baldus, where it grows in plenty. This hath a ſlender climbing ſtalk, which riſes three or four feet high, ſupporting itſelf by faſtening to the neighbouring plants or ſhrubs. The leaves of this are compoſed of nine lobes or ſmall leaves, three ſtanding upon each foot-ſtalk, ſo that it is what the former writers ſtile a nine-leaved plant. The flowers come out at the joints of the ſtalk, in the ſame manner as the common Travellers Joy, which are white, ſo make no great appearance. This ſort flowers in May.

The tenth ſort grows naturally in Virginia and Carolina, from both of theſe countries I have received the ſeeds. This hath many ſlender ſtalks, garniſhed with compound winged leaves at each joint; and are generally compoſed of nine leaves, ſtanding by threes, like thoſe of the eighth ſort, but the ſmall leaves or lobes of this are nearly of a heart-ſhape. The flowers of this ſtand upon ſhort foot-ſtalks, which come out from the wings of theleaves, one on each ſide theſtalk. The flowers are compoſed of four thick petals, which are purple on their outſide, and blue within. They appear in July, and if the autumn proves warm, the ſeeds will ripen in September.

The eleventh ſort was diſcovered by Dr. Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris, where they ſucceeded and perfected ſeeds, ſo that moſt of the gardens in Europe have been furniſhed with the ſeeds from thence: this hath weak climbing ſtalks, which faſten themſelves by their claſpers, to any plants or ſhrubs which ſtand near them, and thereby riſe to the height of ſeven or eight feet, garniſhed with compound winged leaves, conſiſting of nine ſmall leaves (or lobes) which are angular and ſharp-pointed. The flowers come out from the wings of the leaves, which are of a yellowiſh green, and the petals are reflexed backward; they come out in April and May, and in warm ſeaſons the ſeeds will ripen very well, if the plants have a good ſituation.

The twelfth ſort grows naturally in Siberia, from whence the ſeeds were ſent to the imperial garden at Peterſburgh, where they ſucceeded and produced ſeeds, part of which were ſent me in the year 1753. Theſe grew, and the plants have flowered ſeveral years in the Chelſea garden. It hath weak climbing ſtalks which require ſupport, that riſe from four to ſix or eight feet high; the joints are far aſunder; at each of theſe come out two compound winged leaves, whoſe ſmall leaves or lobes are placed by threes; theſe are deeply ſawed on their edges, and terminate in ſharp points. The flowers come out from the wings of the leaves ſingle, ſtanding upon long naked foot-ſtalks, and are compoſed of four broad obtuſe petals, which ſpread open in form of a croſs, of a whitiſh yellow colour. In the center is placed ſeveral germen, ſurrounded by a great number of ſtamina, with flat compreſſed ſummits, of the ſame colour with the petals of the flower; after theſe are paſt, the germen become ſo many compreſſed ſeeds, each having a bearded tail. It flowers in February March and April, and the ſeeds ripen in July or Auguſt.

The thirteenth ſort was ſent me from Jamaica by the late Dr. Houſtoun. This hath ſlender climbing ſtalks, which faſten themſelves to the trees and ſhrubs which ſtand near them, and thereby riſe to the height of ten or twelve feet, garniſhed with trifoliate leaves, coming out on each ſide the ſtalk; the lobes are large, oval, and entire, having three longitudinal veins. The foot-ſtalks of the flowers ariſe at the

ſame joints, cloſe to thoſe of the leaves, one on each ſide the ſtalks: theſe are long, naked, and grow horizontally, extending beyond the leaves before they divide and branch; then there comes out three or four pair of ſmall foot-ſtalks from the large one, each of which divides again into three ſmaller, each ſupporting a ſingle flower: the lower pair of theſe are extended four or five inches, the other gradually diminiſh to the top, ſo that they form a pyramidal thyrſe of flowers; theſe are white, and are compoſed of four narrow petals which are reflexed back, but the ſtamina all ſtand erect.

This hath been by ſome perſons ſuppoſed to be the ſame with the common Travellers Joy, but thoſe who have ſeen the two plants, cannot doubt of their being diſtinct ſpecies.

The fourteenth ſort was ſent me from Campeachy by the late Dr. Houſtoun. This hath ſtrong climbing ſtalks, which faſten themſelves by their claſpers to the neighbouring trees, whereby they are ſupported, and riſe to the height of twenty feet or more, garniſhed at each joint by trifoliate leaves, which are heart-ſhaped, pointed, and entire. The flowers come out on long, naked, branching foot-ſtalks, which riſe from the wings of the leaves; they are white, and collected into roundiſh bunches; theſe are ſucceeded by ſeeds ſhaped like thoſe of the common ſort, but have long curling beards to each, which are finely feathered.

The fifteenth ſort grows naturally in Carolina, from whence I received the ſeeds in the year 1726. This hath weak ſtalks which riſe near four feet high, and by their claſpers faſten themſelves to the neighbouring plants, whereby they are ſupported. The leaves come out oppoſite at the joints; theſe are ſometimes ſingle, at others trifoliate, and ſome of the leaves are divided into three lobes. The flowers come out ſingly from the ſide of the branches upon ſhort foot-ſtalks, which have one or two pair of leaves below the flower, which are oblong and ſharp-pointed. The flowers have four thick petals, like thoſe of the tenth ſort; theſe are of a purple colour, and their inner ſurface is curled, and hath many longitudinal furrows. This flowers in July, and the ſeeds ripen in September.

The three firſt ſorts have perennial roots, which multiply pretty faſt, but their ſtalks die down every autumn, and new ones ariſe in the ſpring, in which particular they differ from all the other ſpecies, therefore require different management, and are propagated in a different manner; therefore I ſhall firſt give directions for their culture.

Theſe plants are propagated either by ſeeds, or parting their roots; but the former being a tedious method (the plants ſeldom riſing until the ſecond year after ſowing, unleſs the ſeeds are ſown in the autumn ſoon after they are ripe, and are often two years more before they flower,) the latter is generally practiſed. The beſt ſeaſon for parting theſe roots is in October or February; either juſt before their branches decay, or before they riſe again in the ſpring.

They will grow almoſt in any ſoil or ſituation; but if the ſoil is very dry, they ſhould always be new planted in the autumn, otherwiſe their flowers will not be ſo ſtrong; but if the ſoil be wet, it is better to defer it until the ſpring. The roots may be cut through their crowns with a ſharp knife, obſerving to preſerve to every offset ſome good buds or eyes; and then it matters not how ſmall you divide them, for their roots increaſe very faſt: but if you part them very ſmall, you ſhould let them remain three or four years before they are again removed, that their flowers may be ſtrong, and their roots multiplied in eyes, which in leſs time cannot be obtained.

Theſe plants are extreme hardy, enduring the cold of our ſevereſt winters in the open air, and are very proper ornaments for large gardens, either to be planted in large borders, or intermixed with other hardy flowers in quarters of flowering ſhrubs; where, by being placed promiſcuouſly in little open places, they fill up thoſe ſmall vacancies, and are agreeable enough. They begin to flower about the beginning of June, and often continue to produce freſh flowers until Auguſt, which renders them valuable, eſpecially ſince they require very little care in their culture; for their roots may be ſuffered to remain ſeveral years undiſturbed, where there is no want to part them, which will not in the leaſt prejudice them.

The fourth ſort is found wild in moſt parts of England, growing upon the ſides of banks under hedges, and extends its trailing branches over the trees and ſhrubs that are near it. This plant in the autumn is generally covered with ſeeds, which are collected into little heads, each of which having, as it were, a rough plume faſtened to it, hath occaſioned the country people to give it the name of Old Man's Beard. It is titled by Lobel and Gerard, Viorna; and by Dodonæus, Vitis alba: in Engliſh it is moſt commonly called Travellers Joy. This ſort is rarely cultivated in gardens, being too rambling, and having but little beauty.

The fifth and ſixth ſorts have no more beauty than the fourth, ſo are ſeldom preſerved in gardens, unleſs for the ſake of variety. They are both as hardy as the common ſort, and may be propagated either by ſeeds or laying down their branches.

The ſeventh ſort retains its leaves all the year, which renders it valuable. This was formerly preſerved in green-houſes in the winter, ſuppoſing it too tender to live in the open air in England; but now it is generally planted in the full ground, where the plants thrive much better than in pots, and produce plenty of flowers, which they never did when they were more tenderly treated; nor have I found that the plants have ſuffered from ſevere froſts; for thoſe which have been growing in the open air at Chelſea, more than fifty years, have reſiſted the greateſt cold without covering.

This ſort doth not produce ſeeds in England, ſo it is propagated by layers, and alſo from cuttings. If they are propagated by layers, it muſt be done in the beginning of October, when the ſhoots of the ſame year only ſhould be choſen for this purpoſe; for the older branches do not put out roots in leſs than two years, whereas the tender ſhoots will make good roots in one year: theſe muſt be pegged down into the ground, in the ſame manner as is uſually practiſed for other layers, to prevent their riſing. If the ſhoots have two inches of earth over them, it will be better than a greater depth; but then, a little old tanners bark ſhould be ſpread over the ſurface of the ground, to keep out the froſt; for as the plants generally begin flowering about Chriſtmas, ſo at the ſame time they are putting out roots, which being but juſt formed, may be injured by ſevere froſts: theſe layers will have ſtrong roots by the following autumn, when they may be taken from the old plant, and tranſplanted where they are deſigned to remain.

When they are propagated by cuttings, they ſhould be planted in March, in pots filled with good kitchen-garden earth, and plunged into a very moderate hot-bed, obſerving to ſhade them from the ſun in the day-time, and gently water them two or three times a week, and in leſs than two months they will have taken root, when they ſhould be gradually inured to the open air. The following ſummer they may be placed in any part of the garden till Michaelmas, and then they ſhould be turned out of the pots and planted in the full ground, either where they are deſigned to remain, or into a nurſery-bed, to grow a year longer to get ſtrength, before they are placed out for good.

All the varieties of Virgin's Bower are propagated by laying down their branches; for although the ſingle flowers ſometimes produce ſeeds in England, yet as theſe ſeeds, when ſown, generally remain a whole year in the ground before they vegetate, ſo the other being the more expeditious method of increaſing theſe plants, is generally practiſed: but in order to ſucceed, theſe layers ſhould be laid down at a different

ſeaſon

ſeaſon from the former ſort; for when they are laid in the autumn, their ſhoots are become tough, ſo rarely put out roots under two years; and after lying ſo long in the ground, not one in three of them will have made good roots; ſo that many have ſuppoſed theſe plants were difficult to propagate, but ſince they have altered their ſeaſon of doing it, they have found theſe layers have ſucceeded as well as thoſe of other plants.

The beſt time for laying down the branches is in the beginning of July, ſoon after they have made their firſt ſhoots, for it is theſe young branches of the ſame year, which freely take root; but as theſe are very tender, there ſhould be great care taken not to break them in the operation: therefore thoſe branches from which theſe ſhoots were produced, ſhould be brought down to the ground, and faſtened to prevent their riſing; then the young ſhoots ſhould be laid into the earth, with their tops raiſed upright, three or four inches above ground; and after the layers are placed down, if the ſurface of the ground be covered with moſs, rotten tanners bark, or other decayed mulch, it will prevent the ground from drying, ſo that the layers will not require watering above three or four times, which ſhould not be at leſs than five or ſix days interval; for when theſe layers have too much wet, the tender ſhoots frequently rot; or when the young fibres are newly put out, they are ſo tender, as to periſh by having much wet: therefore where the method here directed is practiſed, the layers will more certainly take root, than by any other yet practiſed.

As moſt of theſe plants have climbing branches, they ſhould be always planted where they may be ſupported, otherwiſe the branches will fall to the ground and appear unſightly; ſo that unleſs they are properly diſpoſed, inſtead of being ornaments to a garden, they will become the reverſe. Where there are arbours or ſeats, with trellis work round them, theſe plants are very proper to train up againſt it; or where any walls or other fences require to be covered from the ſight, theſe plants are very proper for the purpoſe; but they are by no means proper for open borders, nor do they anſwer the expectation, when they are intermixed with ſhrubs; for unleſs their branches have room to extend, they will not be productive of many flowers.

The ſort with double flowers is the moſt beautiful, ſo that ſhould be preferred to thoſe with ſingle flowers, of which a few only ſhould be planted for variety. They are all equally hardy, ſo are ſeldom injured by froſt, excepting in very ſevere winters, when ſometimes the very tender ſhoots are killed; but if theſe are cut off in the ſpring, the ſtems will put out new ſhoots.

The tenth, eleventh, and fifteenth ſorts are alſo very hardy plants, and have climbing branches, ſo may be diſpoſed in the ſame manner as the other: they are alſo propagated by layers, which will ſucceed, if performed at the ſame time, and in the ſame manner as is directed for them.

The other ſorts are natives of the warmeſt parts of America, ſo will not thrive in this country, unleſs they are preſerved in ſtoves; but as theſe are great ramblers and plants of no great beauty, they are ſeldom preſerved in Europe, but in botanic gardens for the ſake of variety. Theſe may be propagated by layers, in the ſame manner as the other ſorts; or may be raiſed from ſeeds, obtained from the countries where they naturally grow; but theſe muſt be treated in the ſame manner as other exotic plants from the ſame country.

CLEOME. Lin. Gen. Plant. 740. Sinapiſtrum. Tourn. Inſt. R. H. 231. tab. 116.

The CHARACTERS are,

The flower hath a four-leaved empalement which ſpreads open: it hath four petals which are inclined upward and ſpread open, the two lower being leſs than the other; in the bottom there are three mellous glands which are roundiſh, and are ſeparated by the empalement. It hath ſix or more ſtamina which are incurved, having riſing ſummits fixed to their ſide: it hath a ſingle ſtyle, ſupporting an oblong germen, which is of the ſame length as the ſtamina, and crowned by a thick ſtigma. The germen afterward becomes a long cylindrical pod, ſitting upon the ſtyle, having one cell, opening with two valves, and filled with roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliquoſa; the plants of this ſection have in the flowers four long and two ſhort ſtamina, and their ſeeds are included in long pods.

The SPECIES are,

1. CLEOME (*Pentaphylla*) floribus gynandris, foliis quinatis caule inermi. Lin. Sp. 938. *Cleome with flowers having male and female parts, five leaves, and ſmooth ſtalks.* Sinapiſtrum Indicum, pentaphyllum flore carneo, minus, non ſpinoſum. H. L.
2. CLEOME (*Ornithopodoides*) floribus hexandris, foliis ternatis, foliolis ovati-lanceolatis. Lin. Sp. Plant. 940. *Cleome with flowers having ſix ſtamina, triſoliate leaves, and ſpear-ſhaped lobes.* Sinapiſtrum Orientale, triphyllum, ornithopodii ſiliquis. Tourn. Cor. 17.
3. CLEOME (*Luſitanica*) floribus hexandris, foliis ternatis, foliolis lineari-lanceolatis, ſiliquis bivalvibus. *Cleome with flowers having ſix ſtamina, trifoliate leaves, narrow ſpear-ſhaped lobes, and pods having two valves.* Sinapiſtrum Luſitanicum triphyllum, flore rubro. Tourn. Inſt. R. H. 231.
4. CLEOME (*Viſcoſa*) floribus dodecandris, foliis quinatis ternatiſque. Flor. Zeyl. 241. *Cleome with flowers having twelve ſtamina, trifoliate and quinquefoliate leaves.* Sinapiſtrum Zeylanicum, triphyllon & pentaphyllon viſcoſum, flavo flore. Mart. Dec. 3.
5. CLEOME (*Triphylla*) floribus hexandris, foliis ternatis, foliolo intermedio majori. *Cleome with flowers having ſix ſtamina, and trifoliate leaves, whoſe middle lobe is the largeſt.* Sinapiſtrum Indicum triphyllum, flore carneo non ſpinoſum. H. L.
6. CLEOME (*Erucago*) floribus hexandris, foliis ſeptenis, caule ſpinoſo, ſiliquis pendulis. *Cleome with flowers having ſix ſtamina, leaves with ſeven lobes, a prickly ſtalk, and hanging pods.* Sinapiſtrum Ægyptiacum heptaphyllum, flore carneo, majus ſpinoſum. H. L.
7. CLEOME (*Spinoſa*) floribus hexandris, foliis quinatis ternatiſque, caule ſpinoſo. *Cleome with flowers having ſix ſtamina, leaves compoſed of five and three lobes, and a prickly ſtalk.* Sinapiſtrum Indicum ſpinoſum, flore carneo, folio trifido vel quinquefido. Houſt. MSS.
8. CLEOME (*Monophylla*) floribus hexandris, foliis ſimplicibus, petiolatis ovato-lanceolatis. Flor. Zeyl. 243. *Cleome with ſix ſtamina to the flowers, and ſix leaves, which are ovally ſpear-ſhaped.* Sinapiſtrum Zeylanicum viſcoſum, folio ſolitario, flore flavo, ſiliquâ tenui. Burm. Theſ. 217.

The firſt ſort grows naturally in Aſia, Africa, and America; I have received the ſeeds of it from Aleppo, and the coaſt of Guinea, and in the earth which came from the Weſt-Indies with other plants; this hath come up as a weed. It riſes with an herbaceous ſtalk about a foot high, garniſhed with ſmooth leaves, compoſed of five ſmall leaves or lobes, joining at their baſe to one center, and ſpread out like the fingers of a hand. The leaves on the lower part of the ſtalk ſtand upon long foot-ſtalks, which are gradually ſhortened to the top of the ſtalk, where they almoſt join it: the flowers are produced in looſe ſpikes at the end of the ſtalks and branches; theſe have four petals of a fleſh colour, which ſtand erect, ſpreading from each other; and below theſe are placed the ſtamina and ſtyle, which coaleſce at the bottom, and are ſtretched out beyond the petals, where they ſpread open; after the flower is paſt, the germen which ſits upon the ſtyle, becomes a taper pod, about two inches long, filled with round ſeeds. This is an annual plant, which dies ſoon after the ſeeds are ripe.

The ſecond ſort grows naturally in the Levant, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris, and from thence moſt of the botanic gardens in Europe have been furniſhed with it: this riſes

riſes with an upright ſtalk about the ſame height as the firſt, garniſhed with leaves compoſed of three ſpear-ſhaped lobes, ſtanding upon ſhort foot-ſtalks; the flowers come out ſingly from the ſide of the ſtalks, and have four red petals, which ſtand in the ſame form as thoſe of the former ſort: theſe are ſucceeded by ſlender pods two inches long, which ſwell in every diviſion, where each ſeed is lodged, ſo as to appear like joints, as thoſe do of the Bird's-foot Trefoil; when the ſeeds are ripe, the whole plant decays. If the ſeeds of this are ſown in autumn the plants will flower in June, and their ſeeds will ripen in Auguſt, but thoſe which are ſown in the ſpring do not flower till July; ſo that unleſs the ſeaſon proves favourable, the ſeeds will not ripen: if the ſeeds of this ſort are permitted to ſcatter, the plants will come up without care, and require only to be thinned and kept clean from weeds, for they will not bear tranſplanting.

The third ſort grows naturally in Portugal and Spain, from whence I have received the ſeeds. This riſes with an herbaceous ſtalk about a foot and half high, ſending out a few ſhort ſide branches, which are garniſhed with leaves compoſed of three narrow lobes, ſtanding upon ſhort foot-ſtalks. The flowers come out ſingly from the ſide of the ſtalks, are of a deep red colour, and are ſucceeded by thick taper pods, filled with round ſeeds. This is an annual plant, which will thrive in the open air, and requires the ſame treatment as the former.

The fourth ſort grows naturally in the iſland of Ceylon, from whence the ſeeds were brought to Holland, where they ſucceeded, and the ſeeds were ſent me by the late Dr. Boerhaave; this riſes near two feet high, ſending out ſeveral ſide branches, garniſhed with leaves, ſome of which have five, and others three roundiſh lobes ſtanding upon ſhort hairy foot-ſtalks. The flowers come out ſingly at the foot-ſtalks of the leaves, they are of a pale yellow, and are ſucceeded by taper pods between two and three inches long, ending in a point, which are full of round ſeeds. The whole plant ſweats out a viſcous clammy juice. This is alſo an annual plant.

The fifth ſort was ſent me from Jamaica by the late Dr. Houſtoun, in the year 1730. This is an annual plant which riſes two feet high, ſending out many ſide branches, garniſhed with leaves, with one large ſpear-ſhaped lobe in the middle, and two very ſmall ones on the ſide; theſe ſit cloſe to the branches. The flowers come out ſingly from the ſide of the branches, upon long foot-ſtalks: theſe have four large fleſh-coloured petals, and ſix long ſtamina, which ſtand out beyond the petals; when the flowers fade, the germen which ſits upon the ſtyle becomes a taper pod four inches long, filled with round ſeeds.

The ſixth ſort was ſent me from Jamaica by the late Dr. Houſtoun, who found it growing naturally there in great plenty. It alſo grows naturally in Egypt. This riſes with a ſtrong thick herbaceous ſtalk two feet and a half high, dividing into many branches, which are garniſhed with leaves compoſed of ſeven long ſpear-ſhaped lobes, joining in a center at their baſe, where they ſit upon a long ſlender foot-ſtalk: juſt below the foot-ſtalk comes out one or two ſhort, thick, yellow ſpines, which are very ſharp. The flowers come out ſingly from the ſide of the branches, forming a long looſe ſpike at their extremities; this ſpike hath ſingle broad leaves, which half ſurround the ſtalks at their baſe, from the boſom of which, come out the foot-ſtalks of the flowers, which are two inches long, each ſuſtaining a large fleſh-coloured flower, whoſe ſtyle and ſtamina are extended two inches beyond the petals. After the flower is paſt, the germen, which ſits upon the ſtyle, becomes a thick taper pod five inches long, which hangs downward, and is filled with round ſeeds. This is alſo an annual plant, which periſhes ſoon after the ſeeds are ripe.

The ſeventh ſort was ſent me from the Havannah in the year 1731, by the late Dr. Houſtoun. This is alſo an annual plant, which riſes near two feet high, branching out on every ſide: the lower leaves are compoſed of five oblong lobes ſtanding upon long foot-ſtalks, but thoſe on the ſtalks and branches have but three lobes, and have ſhort foot-ſtalks: the main ſtalk and alſo the branches, are terminated by looſe ſpikes of purple flowers, each ſitting upon a ſlender foot-ſtalk, at the baſe of which is placed a ſingle oval leaf. The ſtalks are armed with ſlender ſtiff ſpines, which are ſituated juſt under the foot-ſtalks of the leaves; when the flowers fade, the germen becomes a taper pod, two inches long, filled with round ſeeds.

The eighth ſort grows naturally in Ceylon; this is an annual plant, which riſes with an herbaceous ſtalk a foot and half high, garniſhed with long, narrow, ſingle leaves, ſtanding alternately on the ſtalks; from the wings of the leaves come out the foot-ſtalks of the flower, each ſuſtaining a ſingle yellow flower, which is ſucceeded by a very ſlender taper pod.

All theſe plants except the ſecond and third ſorts, are natives of very warm countries, ſo will not thrive in England without artificial heat; therefore their ſeeds muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be planted in ſeparate ſmall pots, filled with freſh light earth, and plunged into a freſh hot-bed, obſerving to ſhade them until they have taken freſh root; after which they ſhould have air admitted to them every day in proportion to the warmth of the ſeaſon, and their waterings ſhould be frequently repeated, but not given in too great plenty; when the plants have filled theſe ſmall pots with their roots, they ſhould be put into larger, and plunged again into a hot-bed to bring them forward; and in July, when they are too tall to remain longer in the hot-bed, they ſhould be removed into an airy glaſs caſe, where they may be ſcreened from cold and wet, but in warm weather may enjoy the free air. With this management the plants will flower ſoon after, and perfect their ſeeds in autumn. The ſecond and third ſorts may be ſown in the open borders of the garden, where they are deſigned to remain, for they do not require any artificial warmth.

CLEONIA, Portugal Self-heal.

The CHARACTERS are,

It hath a bilabiated empalement of one leaf, which is tubulous and angular; the upper lip is broad, plain, and indented in three parts; the under is ſhort and divided into two. The flower is of the grinning kind, with one petal; the upper lip is erect and divided into two parts, the lower is trifid, the middle ſegment having two lobes, the two lateral ſpread aſunder; it hath four ſtamina, the two lower being the longeſt, whoſe outer top of their ſummits form a croſs. It hath four germen, ſupporting a ſlender ſtyle with four ſtigma, having four equal briſtles; the germen afterward become four ſeeds, incloſed in the hairy empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fourteenth claſs, intitled Didynamia Gymnoſpermia, the flower having two long and two ſhort ſtamina, and are ſucceeded by naked ſeeds filling in the empalement.

This plant grows naturally in Spain and Portugal; it is annual, periſhing ſoon after it has ripened its ſeeds. It was formerly ranged under the genus of Bugula, Tournefort afterward titled it Clinopodium, and father Barrelier placed it with the Prunella, to which genus it is nearly related.

It is propagated by ſeeds, which, when ſown in the autumn the plants will come up the following ſpring: but the ſeeds which are ſown in the ſpring, frequently lie in the ground till the following autumn, and ſometimes till the next ſpring before they vegetate. When the plants come up and are fit to tranſplant, a few of them may be planted into a border where they may remain to produce their flowers and ſeeds, as they require but little culture; ſo a few plants may be allowed to have place in ſmall gardens, where they will not take much room.

CLETHRA. Gron. Fl. Virg. 43. Lin. Gen. Plant. 489.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is cut into five parts; it hath five oblong petals, which are longer than the empalement; it hath ten ſtamina which are as long as the petals, and are terminated by oblong erect ſummits; in the center is ſituated a roundiſh germen ſupporting a permanent erect ſtyle, crowned by a trifid ſtigma. The germen afterward becomes a roundiſh capſule incloſed by the empalement, having three cells, which are full of angular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flowers having ten ſtamina, and one ſtyle.

We know but one SPECIES of this genus at preſent, viz.

CLETHRA (*Alnifolia*) Gron. Virg. 47. *There is no Engliſh title to this plant*, it is the Alnifolia Americana ſerrata, floribus pentapetalis albis in ſpicam diſpoſitis. Pluk. Alm. 18. *American Shrub with an Alder ſawed leaf, and white five-leaved flowers, diſpoſed in a ſpike.*

This ſhrub is a native of Virginia and Carolina, where it grows in moiſt places, and near the ſides of rivulets, riſing to the height of eight or ten feet, but in this country it rarely riſes to half that height: the leaves are in ſhape like thoſe of the Alder-tree, but are longer; theſe are placed alternately upon the branches: the flowers are produced at the extremity of the branches, in cloſe ſpikes: they are compoſed of five leaves, are white, and have ten ſtamina in each, which are nearly of the ſame length with the petals, this plant flowers in July, and when the autumn proves favourable, there are often ſome ſpikes of flowers again in October.

This is hardy enough to bear the open air in England, and is one of the moſt beautiful ſhrubs at the ſeaſon of its flowering; which is very little later than in its native country, being commonly in flower here by the beginning of July; and if the ſeaſon is not very hot, there will be part of the ſpikes in beauty till the beginning of Auguſt; and as moſt of the branches are terminated with theſe ſpikes of flowers, ſo when the ſhrubs are ſtrong, they make a fine appearance at that ſeaſon.

This will thrive much better in moiſt land than in dry ground, and requires a ſheltered ſituation, where it may be defended from ſtrong winds, which frequently break off the branches, where they are too much expoſed to its violence. It is propagated by layers, but they are generally two years before they get root, ſo that at preſent it is rare in England. The fineſt ſhrubs of this kind, which I have yet ſeen, are in the curious garden of his grace the late duke of Argyle, at Whitton near Hounſlow, where they thrive as well as in their native country. They may alſo be propagated by ſuckers, which are ſent out from their roots; if theſe are carefully taken off with fibres in the autumn, and planted into a nurſery-bed, they will be ſtrong enough in two years to tranſplant where they are to remain.

It may alſo be propagated by ſeeds, which muſt be procured from the countries where it grows naturally, for the ſeeds are not perfected in England. But as theſe ſeldom arrive here till ſpring, ſo when they are ſown at that ſeaſon, the plants will not come up till the following ſpring. Therefore the ſeeds ſhould be ſown in pots, and placed in a ſhady ſituation till autumn, then placed under a frame in winter; the plants will come up the next ſpring, and in autumn may be tranſplanted into a nurſery-bed, to get ſtrength before they are placed to remain for good.

CLIFFORTIA. Lin. Gen. Plant. 1004.

The name was given to this genus of plants by Dr. Linnæus, in honour of Mr. George Clifford of Amſterdam; a great collector of plants, and a patron of botaniſts, who has printed a folio book of the plants in his garden, with ſeveral copper-plates, exhibiting the figures of many of the moſt curious plants. We have no Engliſh name for it.

The CHARACTERS are,

It hath male and female flowers in different plants: the male flowers have a ſpreading empalement, compoſed of three ſmall, oval, concave leaves. It hath no petals, but a great number of hairy upright ſtamina, which are the length of the empalement, terminated by compreſſed, oblong, twin ſummits. The female flowers have a permanent empalement, compoſed of three leaves which are equal, ſitting upon the germen; theſe have no petals, but the oblong germen which is ſituated below the empalement, ſupports two long, ſlender, feathered ſtyles, terminated by a ſingle ſtigma; the germen afterward becomes an oblong taper capſule, with two cells crowned by the empalement, including one narrow taper ſeed.

This genus of plants is ranged in the tenth ſection of Linnæus's twenty-ſecond claſs, intitled Dicœcia Polyandria; the plants of this ſection and claſs have male and female flowers on different plants, and the male flowers have a great number of ſtamina.

The SPECIES are,

1. CLIFFORTIA (*Ilicifolia*) foliis ſubcordatis, dentatis. Lin. Sp. Plant. 1308. *Cliffortia with heart-ſhaped indented leaves.* Arbuſcula Afr. folio acuto ilicis caulem amplexo rigido. Boerh. Ind. alt. 2.
2. CLIFFORTIA (*Trifoliata*) foliis ternatis, intermedio tridentato. Prod. Leyd. 253. *Three-leaved Cliffortia, whoſe middle leaf is cut in three parts.* Myrica foliis ternatis, intermediis cuneiformibus tridentatis. Hort. Cliff. 456.
3. CLIFFORTIA (*Ruſcifolia*) foliis lanceolatis, integerrimis. Hort. Cliff. 463. *Cliffortia with ſpear-ſhaped leaves which are entire.* Frutex Æthiopicus conifer, fructu parvo, ſparſim intra folia ruſci, ſeminibus cylindraceis.

The firſt ſort grows naturally at the Cape of Good Hope, but hath been long cultivated in many of the Engliſh gardens; however it was not reduced to any genus, till Dr. Linnæus eſtabliſhed this, and gave it the title. By ſome former writers it was called Camphorata, to which genus it had no relation.

It riſes with a weak ſhrubby ſtalk four or five feet high, ſending out many diffuſed branches, which ſpread out on every ſide, requiring ſome ſupport: theſe are garniſhed with leaves, which are heart-ſhaped at their baſe, but broad at their ends, where they are ſharply indented. They are very ſtiff, of a grayiſh colour, and cloſely embrace the ſtalks with their baſe, and are placed alternate on the branches; from the boſom of theſe ariſe a ſingle flower, ſitting cloſe to the branch, having no foot-ſtalk. Before the empalement is ſpread open, it forms a bud, in ſhape and ſize of thoſe of the Caper; this empalement is compoſed of three green leaves, which afterwards ſpread open, and then the numerous ſtamina appear ſtanding erect; theſe, as alſo the inner ſurface of the empalement, are of a yellowiſh green colour. The flowers appear in June, July, and Auguſt, but the leaves continue in verdure through the year.

All the plants which I have ſeen of this ſort, either in the Engliſh or Dutch gardens, were male, nor have I heard of any female plants being in any of the European gardens.

This plant is eaſily propagated by cuttings, which may be planted in any of the ſummer months; if theſe are planted in ſmall pots filled with light earth, and plunged into a very moderate hot-bed they will ſoon take root, provided they are ſcreened from the ſun and duly watered; when they have taken root, they muſt be gradually inured to bear the open air, to which they ſhould be expoſed, to prevent their drawing up weak: therefore they ſhould be placed abroad till they have obtained ſome ſtrength, then they may be each tranſplanted into a ſeparate ſmall pot, and placed in the ſhade until they have taken freſh root; after which they may be placed with other of the hardy kinds of exotic plants in a ſheltered ſituation till October, when they ſhould be removed into the greenhouſe, or placed under a common hot-bed frame, where they may be ſcreened from the hard froſt, but

enjoy the free air at all times when the weather is mild.

When the plants advance in height, their ſtems and branches muſt be ſupported, otherwiſe they will trail upon the ground. In ſummer they muſt be placed in the open air, with Myrtles and other hardy green-houſe plants; and in winter the plants may be treated in the ſame manner as thoſe, but muſt have little water in winter. This plant has endured the cold of our ordinary winters, when planted near a ſouth-weſt wall without covering, but in ſevere winters they are always deſtroyed.

The ſecond ſort is a native of the ſame country as the firſt; this hath very ſlender ligneous ſtalks, which muſt be ſupported, otherwiſe they will fall to the ground. Theſe ſend out ſlender branches on every ſide, which are cloſely garniſhed with trifoliate leaves ſtanding cloſe to the branches; the middle lobes of theſe are much larger than the two ſide, and are indented in three parts. The flowers of this come out from the boſom of the leaves, having very ſhort foot-ſtalks, and are ſhaped like thoſe of the firſt, but are ſmaller; theſe appear in July and Auguſt. Of this ſort we have only male plants in the Engliſh gardens, which can only be propagated by layers; and as theſe are two years before they take root, the plants are at preſent very rare in England. This ſort requires the ſame management as the firſt, and is equally hardy, but muſt not be over watered in winter. The leaves of this ſort continue green all the year, and being ſingularly ſhaped, they make a variety in the green-houſe during the winter ſeaſon.

The third ſort riſes with a weak ſhrubby ſtalk about four feet high, ſending out lateral branches, which are covered with a whitiſh bark, and are garniſhed with leaves, placed in cluſters without order; theſe are ſtiff, of the conſiſtence and colour of the Butchers Broom, but are narrower, and run out to a longer point. Between theſe cluſters of leaves the flowers come out in looſe bunches, theſe have a great number of yelloviſh ſtamina, included in a three-leaved empalement. We have only the male plant of this ſort, which is very difficult to propagate, ſo is very rare in Europe at preſent.

This plant is tenderer than either of the former ſorts, ſo ſhould be placed in a warm green-houſe in winter, and during that ſeaſon, they muſt have but little water. In the ſummer they may be expoſed to the open air in a ſheltered ſituation, but they ſhould not remain abroad too late in the autumn; for if there ſhould be much rain at that ſeaſon, it would endanger theſe plants if they are expoſed to it.

CLIMATE [of Κλίμα, *Gr.* an inclination,] is a part of the ſurface of the earth bounded by two circles parallel to the equator; ſo that the longeſt day in that parallel, neareſt to the pole, exceeds the longeſt day in that parallel neareſt to the equator by ſome certain ſpace of time, viz. half an hour, till you come to places ſituate nearly under the arctic circle; and a whole hour, or even ſeveral days when you go beyond it.

The antient Greek geographers reckoned only ſeven climates from the equator towards the north pole, and denominated them from ſome noted place, through which the middle parallel of the climate paſſed; but the moderns reckon up twenty-four.

The beginning of the climate is the parallel circle, wherein the day is the ſhorteſt.

The end of the climate is that wherein the day is the longeſt.

The climates therefore are reckoned from the equator to the pole; and are ſo many bands or zones, terminated by lines parallel to the equator; though in ſtrictneſs there are ſeveral climates in the breadth of one zone.

Each climate only differs from its contiguous ones, in that the longeſt day in ſummer is longer or ſhorter by half an hour in one place than the other.

As the climates commence from the equator, the firſt climate at its beginning has its longeſt day preciſely twelve hours long; at its end twelve hours and a half: the ſecond, which begins where the firſt ends, viz. at twelve hours and a half, ends at thirteen hours: and ſo of the reſt, as far as the polar circles.

Here what geographers call hour-climates terminate, and month-climates commence.

As an hour-climate is a ſpace compriſed between two parallels of the equator, in the firſt of which the longeſt day exceeds that in the latter by half an hour; ſo the month-climate is a ſpace between two circles parallel to the polar circles, whoſe longeſt day is longer or ſhorter than that of its contiguous one by a month, or thirty days.

The antients, who confined the climates to what they imagined the habitable part of the earth, only allowed of ſeven, as had been ſaid: the firſt they made to paſs through Meroe, the ſecond through Sienna, the third through Alexandria, the fourth through Rhodes, the fifth through Rome, the ſixth through Pontus, and the ſeventh through the mouth of the Boryſthenes.

The moderns, who have ſailed farther towards the poles, make thirty climates on each ſide; and becauſe the obliquity of the ſphere makes a little difference in the length of the longeſt day, ſome of them make the difference of the climate but a quarter of an hour inſtead of half an hour.

The term climate is vulgarly beſtowed on any country or region differing from another, either in reſpect of the ſeaſons, the quality of the ſoil, or even the manners of the inhabitants, without any regard to the length of the longeſt day.

CLINOPODIUM. Lin. Gen. Plant. 644. Tourn. Inſt. R. H. 194. tab. 92. Field Baſil.

The CHARACTERS are,

It hath an involucrum cut into many parts, is the length of the empalement, upon which the whorls ſit. The empalement is of one leaf, with a cylindrical tube, which is divided into two lips; the upper lip is broad, trifid, acute, and reflexed; the under lip is cut into two narrow ſegments, which turn inward. The flower is of the lip kind, with a ſhort tube enlarging to the mouth; the upper lip is erect, concave, and indented at the top, which is obtuſe; the under lip is trifid and obtuſe, the middle ſegment being broad and indented. It hath four ſtamina under the upper lip, two of which are ſhorter than the other, terminated by roundiſh ſummits; in the center is ſituated the quadripartite germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by a ſingle compreſſed ſtigma. The germen afterward become four oval ſeeds ſhut up in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fourteenth claſs, intitled Didynamia Gymnoſpermia. The flowers of this claſs and ſection, have two long, and two ſhort ſtamina, which are ſucceeded by four naked ſeeds.

The SPECIES are,

1. CLINOPODIUM (*Vulgare*) capitulis ſubrotundis, hiſpidis, bracteis ſetaceis. Lin. Sp. Plant. 587. *Field Baſil with roundiſh prickly heads, and briſtly bractea.* Clinopodium Origano ſimile, elatius, majore flore. C. B. P. 225. *Common Engliſh Field Baſil.*
2. CLINOPODIUM (*Incanum*) foliis ſubtus tomentoſis, verticillis explanatis, bracteis lanceolatis. Lin. Sp. Plant. 588. *Field Baſil with leaves which are woolly on the under ſide, broad plain whorls, and ſpear-ſhaped bractea.* Clinopodium menthæ folio incanum, & odoratum. Hort. Elth. 87.
3. CLINOPODIUM (*Rugoſum*) foliis rugoſis, capitulis axillaribus, pedunculatis, explanatis, radiatis. Lin. Sp. Plant. 588. *Field Baſil with rough leaves, plain heads growing on the ſides of the ſtalks, which have foot-ſtalks, and are radiated.* Clinopodium rugoſum, capitulis ſcabioſæ. Hort. Elth. 88.
4. CLINOPODIUM (*Humile*) humile ramoſum, foliis rugoſioribus, capitulis explanatis. *Low branching Field Baſil with rougher leaves, and plain heads.* Clinopodium Americanum humile, foliis rugoſioribus. Dale.

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5. CLINOPODIUM (*Caroliniánum*) caule erecto, non ramoſo, foliis ſubtus villoſis, verticillis paucioribus; bracteis calyce longioribus. *Field Baſil with an upright unbranching ſtalk, leaves hairy on their under ſide, fewer whorls, and bractea longer than the empalement.* Clinopodium Americanum, erectum, non ramoſum foliis longioribus, internodiis longiſſimis. Dale.
6. CLINOPODIUM (*Ægyptiacum*) foliis ovatis rugoſis, verticillis omnibus diſtantibus, i. e. *Field Baſil with oval rough leaves, and the whorls of flowers ſtanding at a great diſtance.* Clinopodium Ægyptiacum, vulgari ſimile. Dill. *Ægyptian Field Baſil like the common.*

The firſt ſort grows naturally by the ſide of hedges and in thickets, in many parts of England; this hath a perennial fibrous root, which ſends up ſeveral ſtiff ſquare ſtalks a foot and a half high, from which come out a few lateral branches toward the top, garniſhed with oval hairy leaves, placed oppoſite; at the top of the ſtalks the flowers come out in round whorls, or heads; one of theſe terminate the ſtalk, and there is generally another which ſurrounds the ſtalk at the joint immediately below it. The flowers are ſometimes purple, at others white, for they vary from one colour to the other, when they are propagated by ſeeds, ſo that both colours are found naturally in the fields. The whorls (or heads) grow very cloſe, and each foot-ſtalk ſuſtains ſeveral flowers; each flower hath a tubular empalement, ending in five ſharp points, which ſtand erect; at the baſe of the empalement ſtand two briſtly ſpines, which Linnæus terms the bractea; theſe ſtand almoſt horizontal under the empalement. The flower is of the labiated, or lip kind, according to Tournefort, Ray, &c. which is now ſtyled ringent, or grinning, from the appearance which the upper part has to the mouth, or chaps of animals. The upper lip is broad and trifid, but the under is cut into two narrow ſegments; each flower is ſucceeded by four naked ſeeds, ſitting at the bottom of the empalement. This flowers in June.

The ſecond ſort grows naturally in Penſylvania and Carolina, from both of theſe countries I have frequently received the ſeeds; this hath a perennial root, which ſends up many ſquare ſtalks about two feet high, which put out a few ſhort ſide branches toward the upper part, garniſhed with oblong oval leaves, about the ſize of thoſe of Water Mint, ſtanding oppoſite, cloſe to the ſtalk; they are hoary, and ſoft to the touch, and have a ſtrong odour, between that of Marjoram and Baſil. The upper ſurface of the leaves is of a pale green, but their under ſide is hoary and woolly, they are ſlightly indented on their edges. The flowers grow in flat ſmooth whorls round the ſtalks, each ſtalk hath generally three of theſe whorls, the upper which terminates the ſtalk being ſmaller, the other two increaſing, ſo that the lower is the greateſt. The flowers are of a pale purple colour, and ſhaped like thoſe of the firſt ſort, but the ſtamina of this ſtands out beyond the petal, and the bractea at the baſe of the empalement are large, ſpear-ſhaped, and indented on their ſides. This plant is called Snake-weed in ſome parts of America, ſuppoſing it a remedy for the bite of rattle ſnakes. This flowers in July in England.

The third ſort grows naturally in Carolina, from whence the ſeeds were ſent me by the late Dr. Dale: this hath a perennial root, which ſends up ſeveral ſquare ſtalks, which are cloſely covered with browniſh hairs; theſe riſe between two and three feet high, garniſhed with leaves which are very unequal in their ſize, thoſe at the bottom, and alſo toward the top, being above three inches long, and one inch and a quarter broad, whereas thoſe in other parts of the ſtalk are not half ſo large; they are rough on their upper ſide, hairy below, and ſawed on their edges, ſtanding oppoſite: all the lower part of the ſtalk, but immediately below the foot-ſtalks of the flower-heads, there are three large leaves ſtanding round the ſtalks; between theſe ariſe two ſlender hairy foot-ſtalks, about three inches long, one on each ſide the ſtalk; theſe ſuſtain ſmall heads of flowers, ſhaped like thoſe of the ſcabious; they are white, ſhaped like thoſe of the other, but ſmaller; the bractea immediately under the empalement, ſpread out like rays. This plant flowers in September in this country, but never ripens its ſeeds here.

The ſeeds of the fourth ſort were ſent me from Carolina, by the late Dr. Dale; this hath ſome appearance of our common ſort, but the ſtalks do not grow more than half ſo high, and divide into many long ſide branches; the leaves are ſmaller and rougher, and the whorls of flowers are produced half the length of the branches, whereas the common ſort hath rarely more than two; the bractea at the baſe of the empalement is alſo much longer. This flowers in June and July, and hath a perennial root.

The fifth ſort was ſent me by the late Dr. Dale, from Carolina; this hath a perennial root, which ſends up ſtrait hairy ſtalks, almoſt round; the joints of theſe are four or five inches aſunder, at each of theſe come out two oblong leaves, hairy on their under ſide, ſtanding upon ſhort foot-ſtalks; at the bottom of theſe come out on each ſide a ſlender branch, half an inch long, having two or four ſmall leaves, ſhaped like the other. The flowers are produced in ſmall whorls, ſtanding thinly; theſe are white, and the bractea are longer than the empalement. This flowers in Auguſt.

The ſixth ſort is a native of Egypt, from whence the ſeeds were ſent to Europe, and the plants have for ſome years paſt grown in many curious gardens. It hath a perennial root; the ſtalks riſe a foot and an half high, garniſhed with oval leaves, having many tranſverſe deep furrows, of a dark green colour, placed oppoſite, at about five or ſix inches aſunder. There are commonly two or four ſide branches from the main ſtem, produced toward the bottom; and the whorls of flowers are produced at every joint toward the upper part of the ſtalks: theſe are pretty large and hairy. The flowers are ſomewhat larger than thoſe of the common Field Baſil, and are of a deeper colour, ſtretching a little more out of the empalement. The leaves of this have at firſt ſight much the ſame appearance; but when they are obſerved with attention, the difference is ſoon obſerved between the two ſorts: but the greateſt difference is in the leaves and whorls of flowers being placed at a greater diſtance, and the ſtalks growing ſparſedly in this ſpecies; nor do the plants continue ſo long as thoſe of the common ſort.

This ſort flowers in June, commonly a fortnight or three weeks before the common Field Baſil, and the ſeeds ripen in September; which, if permitted to ſcatter, the plants will come up in autumn; and if the winter proves favourable, they will live in the open air, provided they grow on a dry ſoil; but in moiſt ground they are frequently deſtroyed, eſpecially when the plants are young.

This plant approaches near to the Clinopodium Orientale Origani folio, flore minimo. Tour. Corol. 12. But by comparing this with a ſpecimen of that ſort from the Paris garden, I find the leaves of that are ſmoother, and placed much nearer together on the ſtalks than thoſe of this ſort; the flowers are ſmaller, ſo that it may be deemed a diſtinct ſpecies, as theſe differences are permanent, and do not alter in any of the plants which ariſe from the ſeeds.

Theſe plants may be propagated by ſeeds, and alſo by parting their roots; the latter is generally practiſed in England, becauſe few of the ſorts perfect their ſeeds here. The beſt time to tranſplant and part their roots is in autumn, that they may take root before winter. If theſe are planted in a dry ſoil, they are all, except the third ſort, hardy enough to thrive in the open air in England, and require no other care but to keep them clean from weeds, and every other year they may be tranſplanted and parted. The third ſort muſt be planted in pots, and in winter ſheltered under a frame, where the plants may enjoy the free air in mild weather, but ſcreened from froſt, otherwiſe they will not live in this country.

CLITORIA. Lin. Gen. Plant. 796. Ternatea. Tourn. Act. Reg. 1706. Clitorius. Dill. Hort. Elth. 76. We have no Engliſh title for this plant.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is tubular, erect, and indented in five parts at the top. The flower is of the butterfly kind, having a large ſpreading ſtandard, which is erect, and indented at the top; the two wings are oblong, obtuſe, and ſhorter than the ſtandard, which is cloſed. The keel is ſhorter than the wings; it is roundiſh and hooked; it hath ten ſtamina, nine of which are joined, and one ſtands ſeparate, which are terminated by ſingle ſummits. In the center is ſituated an oblong germen, ſupporting a riſing ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a long, narrow, compreſſed pod, with one cell, opening with two valves, incloſing ſeveral kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria; the flowers of this ſection have ten ſtamina, which compoſe two bodies.

The SPECIES are,

1. CLITORIA (*Ternatea*) foliis pinnatis. Hort. Cliff. 360. *Clitorea with winged leaves.* Ternatea flore ſimplici cæruleo. Tourn. Acad. Reg. Sc. 1706.
2. CLITOREA (*Braſiliana*) foliis ternatis, calycibus campanulatis ſolitariis. Hort. Upſal. 215. *Clitoria with trifoliate leaves, and a ſingle flower with a bell-ſhaped empalement.* Planta leguminoſa Braſiliana, Phaſeoli flore, flore purpureo maximo. Breyn. Cent. 78. tab. 32.
3. CLITORIA (*Virginiana*) foliis ternatis, calycibus campanulatis ſubgeminis. Flor. Virg. 83. *Three-leaved Clitoria with two flowers joined, whoſe empalements are bell-ſhaped.* Clitorius trifolius flore minore cæruleo. Hort. Elth. 90. tab. 76.
4. CLITORIA (*Mariana*) foliis ternatis, calycibus cylindricis. Lin. Sp. Plant. 753. *Clitoria with trifoliate leaves, and cylindrical empalements to the flowers.* Clitorius Marianus trifolius ſubtus glaucis. Pet. Hort. Sicc. 243.

The firſt ſort grows naturally in India; the ſeeds of this were firſt brought to Europe from Ternate, one of the Molucca Iſlands, and this induced Dr. Tournefort to give the title of Ternatea to this genus. There is a variety of this with white flowers, and another with large blue flowers, which make a fine appearance. The ſeeds which I received of the latter, produced all the plants with very double flowers, without the leaſt variation; but in cold ſeaſons the plants do not produce any pods here.

This riſes with a twining herbaceous ſtalk to the height of four or five feet, in the ſame manner as the Kidney-bean, and requires the like ſupport; for in the places where it grows naturally, it twiſts itſelf about the neighbouring plants; the ſtalks are garniſhed with winged leaves, compoſed of two or three pair of lobes, terminated by an odd one; theſe are of a beautiful green, and are placed alternate on the ſtalks; from the appendages of the leaves, come out the foot-ſtalks of the flower; each of theſe is encompaſſed by two very fine leaves about the middle, where they are bent, ſuſtaining a very large, gaping, beautiful flower, whoſe bottom part ſeems as if growing to the top.

The flowers have a green membranaceous empalement, which is cut into five parts. The ſtandard of the flowers is large, and is ſpread open very wide; and the flowers are of ſo deep a blue colour, as to ſtain paper, after having been many years dried, almoſt as blue as indigo; theſe flowers are ſucceeded by long ſlender pods, containing ſeveral kidney-ſhaped ſeeds.

The ſecond ſort grows naturally in the Braſils, from whence theſe ſeeds were brought to Europe. This hath a twining ſtalk like the former, which riſes five or ſix feet high, garniſhed at each joint with one trifoliate leaf, ſtanding upon a long foot-ſtalk. The flowers come out ſingly from the foot-ſtalk of the leaves, ſtanding upon pretty long foot-ſtalks, which

are encompaſſed about the middle with two ſmall oval leaves; the flowers are very large, the ſtandard being much broader than that of the firſt ſort, and the two wings are larger; the flowers are of a fine blue colour, ſo make a fine appearance. The flowers appear in July, and in warm ſeaſons the ſeeds will ripen in autumn, ſoon after which the plants decay.

There is one with a double flower of this ſort, which I raiſed in the Chelſea garden ſome years paſt, from ſeeds ſent me from India; but the plants did not produce ſeeds here, and being annual, the ſort was loſt. The flowers of this were very beautiful.

The ſeeds of the third ſort were ſent me from the Bahama Iſlands; this ſends out from the root two or three ſlender twining ſtalks, which riſe to the height of ſix or ſeven feet, garniſhed at each joint with one trifoliate leaf, whoſe lobes are oblong and pointed. At the oppoſite ſide of the ſtalk, the foot-ſtalk of the flower ariſes, which is little more than an inch long, naked, and ſuſtains a ſingle flower, which is of a purple colour within, but of a greeniſh white on the outſide, not half ſo large as either of the former: theſe flowers are each ſucceeded by long, ſlender, compreſſed pods, ending in a point, which contain one row of roundiſh kidney-ſhaped ſeeds. This ſort flowers in July and Auguſt, and the ſeeds ripen in autumn.

The ſeeds of the fourth ſort were ſent me from Carolina, where the plants grow naturally. This riſes with a twining weak ſtalk about five feet high, garniſhed with trifoliate leaves like the former, whoſe lobes are narrower, and of a grayiſh colour on their under ſide; the flowers come out by pairs on the foot-ſtalks; their empalements are cylindrical. The flowers are ſmall, and of a pale blue colour within, but of a dirty white on the outſide. This flowers in Auguſt, but rarely ripens any ſeeds in England.

All theſe ſorts are annual with us in England, ſo that unleſs the ſeeds ripen, the ſpecies are loſt; and as the two ſorts with double flowers have not formed any pods in this country, ſo far as I have been able to learn, therefore the ſeeds of theſe muſt be procured from the countries where they naturally grow. Indeed theſe are ſuppoſed to be only varieties, which accidentally ariſe from the ſingle. If this be true, I cannot account for the ſucceſs of thoſe plants which grew at Chelſea, for they were all of the ſame double kind, without the leaſt variation; and this was not from a ſingle experiment, but in three different years when I received the ſeeds, the plants did all of them produce double flowers.

The ſeeds of theſe plants muſt be ſown upon a good hot-bed early in the ſpring; and when the plants are two inches high, they ſhould be carefully taken up, and each planted in a ſmall pot filled with light freſh earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them till they have taken freſh root, and refreſh them with water as they may require it. After they are well rooted in the pots, they muſt have air every day in proportion to the warmth of the ſeaſon, to prevent their drawing up weak; their waterings ſhould be repeated two or three times a week, but they ſhould not have too much at each time. As theſe plants have climbing ſtalks, they will ſoon grow too tall to remain under common frames, therefore they muſt then be removed into the ſtove, and plunged into the bark-bed; but if their roots have filled the pots, they ſhould be removed into larger, and afterward they muſt be treated in the ſame manner as other plants from the ſame countries.

CLUSIA. Lin. Gen. Plant. 577. Plum. Nov. Gen. 20. tab. 20. The Balſam-tree.

The CHARACTERS are,

It hath an imbricated empalement, compoſed of roundiſh concave leaves which ſpread open; it hath five or ſix large, roundiſh, concave, ſpreading petals. In the bottom is ſituated a globular nectarium, including the germen, which is pervious at the top, from which place the ſtigma ariſes.

It hath a great number of ſtamina, which are ſhorter than the petals, terminated by ſingle ſummits. The oblong oval germen is terminated by a plain ſtar-like ſtigma, with ſix obtuſe indentures. The germen afterward becomes an oval capſule, with ſix furrows, and ſix cells, opening with ſix valves, which ſpread in form of a ſtar, including many angular ſeeds fixed to a column, ſurrounded with pulp.

This genus of plants is ranged in the firſt ſection of Linnæus's twenty-third claſs, intitled Polygamia Monœcia, having male, female, and hermaphrodite flowers on the ſame plant.

The SPECIES are,

1. CLUSIA (*Flava*) foliis aveniis corollis tetrapetalis. Jacq. Amer. 34. *Cluſia whoſe leaves have no veins, and the flower has four petals.* Terebinthus folio ſingulari, non alato, rotundo, ſucculento flore pallidè luteo. Sloan. Hiſt. Jam. 2. p. 97. *Commonly called Balſam-tree in America.*
2. CLUSIA (*Venoſa*) foliis venoſis. Lin. Sp. Plant. 510. *Cluſia with veined leaves.* Cluſia flore roſeo minor, fructu flaveſcente. Plum. Nov. Gen. 2.

There are three varieties of the firſt ſort, which differ in the ſize and colour of their flowers and fruit; one hath a white flower and ſcarlet fruit, another hath a Roſe flower and a greeniſh fruit, and a third hath a yellow fruit: but theſe are ſuppoſed to be only ſeminal variations, though Plumier has enumerated them as diſtinct ſpecies; but as the plants have not flowered in England, I can give no particular account of their difference: the ſingular beauty of the leaves of this plant, renders it worthy of a place in every collection of rare plants.

The firſt ſort is pretty common in the Britiſh Iſlands of America, where the trees grow to the height of twenty feet, and ſhoot out many branches on every ſide, garniſhed with thick, round, ſucculent leaves, placed oppoſite. The flowers are produced at the ends of the branches, each having a thick ſucculent cover: theſe are of different colours in different plants, ſome being red, others yellow, ſome white, and ſome green. After the flowers are paſt, they are ſucceeded by oval fruit, which are alſo of different colours in different plants: from every part of theſe trees there exſudes a ſort of turpentine, which is called in the Weſt Indies Hog-gum; becauſe they ſay, that, when any of the wild hogs are wounded they repair to theſe trees, and rub their wounded parts againſt the ſtems of them, till they have anointed themſelves with this turpentine, which heals their wounds. The turpentine of theſe trees is alſo greatly recommended for the cure of ſciaticas, by ſpreading it on a cloth, and applying it as a plaſter to the part affected.

The plants are at preſent very rare in Europe: there were ſome years ago ſome fine plants in the garden of Mr. Parker, near Croyden in Surry; theſe were brought over, growing in tubs of earth from Barbadoes, which is the beſt method of procuring them; for the ſeeds ſeldom ſucceed, and the young plants grow ſo ſlowly, as not to make any figure in ſome years; but in the bringing over the plants, great care ſhould be had, that they do not receive much wet; for as theſe plants have very ſucculent ſtems, moiſture will cauſe them to rot.

The plants are tender, ſo they muſt be conſtantly kept in the ſtove, otherwiſe they will not live through the winter in England; they muſt alſo be watered very ſparingly, eſpecially in winter, for they naturally grow in thoſe parts of the iſlands, where it ſeldom rains, therefore they cannot bear much moiſture.

They may be propagated by cuttings, which muſt be laid to dry when they are cut off from the plants for a fortnight or three weeks, that the wounded part may be healed over, otherwiſe they will rot. When the cuttings are planted, the pots ſhould be plunged into a hot-bed of tanners bark, and now and then gently refreſhed with water: the beſt time for planting theſe cuttings is in June or July, that they may be well rooted before the cold weather comes on in autumn. In winter theſe plants may be placed upon ſtands in the dry ſtove; but if in ſummer they are plunged into the tan-bed, they will make great progreſs, and their leaves will be large, in which conſiſts the great beauty of theſe plants.

The ſecond ſort was diſcovered by the late Dr. Houſtoun, growing naturally at Campeachy, from whence he ſent me ſome dried ſamples and ſeeds: this hath very large oval ſpear-ſhaped leaves, ending in points, which are placed alternate on the branches, and have ſeveral ribs, which go off from the midrib alternate, riſing upward to the ſide of the leaves; and alſo a great number of ſmall veins, running horizontally between theſe ribs. The borders of the leaves are ſawed, and their under ſides are of a ſhining brown colour. The branches are covered with a woolly down, and the flowers are produced in looſe ſpikes at the end of the ſhoots; theſe are ſmaller than thoſe of the former ſort, and are of a Roſe colour. This tree riſes to the height of twenty feet; it is propagated by ſeeds, which muſt be obtained from the countries where the trees naturally grow, for there can be little hopes of obtaining any of the ſeeds in Europe. The plants are tender, ſo muſt be placed in the tan-bed of the bark-ſtove, otherwiſe they will not thrive in this country; and they muſt be treated in the ſame manner as is directed for other tender plants from the ſame countries.

CLUTIA. This genus of plants was conſtituted by the learned Dr. Boerhaave, profeſſor of botany in the univerſity of Leyden, in honour of Augerius Clute, a curious botaniſt.

The CHARACTERS are,

It is male and female in different plants. The male flowers have a large ſpreading empalement, compoſed of five oval concave leaves; they have five heart-ſhaped petals, which are ſhorter than the empalement, and ſpread open. They have five exterior nectariums, which are ſituated in a circle at the bottom of the petals; and five interior, which are ſituated within the other, having ſmall apices with a mellous liquor, and five ſtamina ſituated in the middle of the ſtyle, which ſpread horizontally, terminated by roundiſh ſummits: theſe have no germen, but a long truncated ſtyle in the middle of the ſtamina. The female flowers have permanent empalements, and petals like thoſe of the male; theſe have five double exterior nectariums, but no interior; they have a roundiſh germen, ſupporting three bifid reflexed ſtyles the length of the petals, crowned by obtuſe ſtigma: the germen afterward becomes a globular capſule, with ſix furrows, and three cells, each containing a ſingle ſeed.

This genus of plants is ranged in the thirteenth ſection of Linnæus's twenty-ſecond claſs, intitled Diœcia Gynandria. This ſection and claſs include thoſe plants which have the different ſexes on ſeparate plants, and the male flowers have their ſtamina adhering to the ſtyle.

The SPECIES are,

1. CLUTIA (*Alaternoides*) foliis ſeſſilibus lineari-lanceolatis floribus ſolitariis erectis. Hort. Cliff. 500. *Clutia with linear ſpear-ſhaped leaves ſitting cloſe to the ſtalks, and ſolitary erect flowers.* Alaternoides Africana telephii legitimi imperati foliis. Hort. Amſt. 2.
2. CLUTIA (*Pulchella*) foliis ovatis integerrimis, floribus lateralibus. Lin. Sp. Plant. 1042. *Clutia with oval entire leaves, and flowers growing from the ſides of the branches.* Frutex Æthiopicus, portulace folio, flore ex albo vireſcente. Hort. Amſt. 1. p. 177.
3. CLUTIA (*Eleutheria*) foliis cordato lanceolatis. Flor. Zeyl. *Clutia with heart ſpear-ſhaped leaves.* Ricinus dulcis arboreſcens Americanus, populneâ fronde argenteâ. Pluk. Alm. 321.

The two firſt ſorts are natives of Africa, from whence they were brought to ſome curious gardens in Holland, and have ſince been communicated to moſt of the botanic gardens in Europe. The firſt ſort with male flowers has been long an inhabitant of ſome curious gardens in England; the other with female flowers has been lately introduced.

The ſecond ſort has alſo been ſome years in the Engliſh gardens, where we had not that ſort with male flowers till lately, when I was favoured with one by my learned friend Dr. Job Baſter, of Zirkzee in Holland.

The firſt ſort riſes with a ſhrubby ſtalk to the height of ſix or eight feet, putting out many ſide branches which grow erect; theſe are garniſhed with ſmall, linear, ſpear-ſhaped leaves, placed alternate, ſitting cloſe to the branches: they are of a grayiſh colour and entire. The flowers come out from the joints, at the ſetting on of the leaves: toward the upper part of the branches theſe are ſmall and of a greeniſh white; they appear in June, July, and Auguſt, but being ſmall make no great appearance.

The ſecond ſort riſes about the ſame height with the firſt, but hath a ſtronger ſtem; the branches are garniſhed with oval leaves, which are much larger than thoſe of the firſt ſort, ſtanding upon foot-ſtalks which are an inch long; they are of a ſea green, and entire; the flowers are like thoſe of the firſt ſort in ſhape and colour, but thoſe on the male plants are ſmaller, and grow cloſer together than thoſe of the female, but both are ſuſtained upon ſhort foot-ſtalks. Theſe flowers appear at the ſame time as thoſe of the firſt ſort, and the ſeeds ripen in autumn. I have raiſed ſeveral of theſe plants from ſeeds, which have all proved female, the ſame as the parent plant.

Theſe plants are eaſily propagated by cuttings during any of the ſummer months: if the cuttings are planted in ſmall pots, and plunged into a very moderate hot-bed, and ſhaded from the heat of the ſun in the middle of the day, they will ſoon take root, and ſhould then be inured to the open air, otherwiſe they will draw up very weak: afterward theſe plants may be each put into a ſeparate ſmall pot, and placed in a ſheltered ſituation, where they may remain until the middle of October, or later, if the weather continues mild, when they ſhould be removed into the green-houſe, and placed where they may have the free air in mild weather, for they only require to be protected from froſt, therefore require no warmth in winter; but if the green-houſe is ſhut up too cloſe, or the plants are much ſhaded by others, the tender ſhoots are ſubject to grow mouldy, which deſtroys more of theſe plants than the cold. In ſummer they muſt be placed abroad in a ſheltered ſituation, with other hardy exotic plants.

As theſe plants are always green, they look well in the green-houſe during the winter ſeaſon; and in ſummer, when they are placed in the open air with other exotic plants, they make a pretty variety.

The third ſort grows naturally in India, from whence the ſeeds were brought. This riſes with an upright ſhrubby ſtalk, not more than three or four feet high in England; but in the places where it grows naturally, it riſes upward of twenty feet high, and ſends out many branches at the top, ſo as to form a large ſpreading head: the branches are garniſhed with leaves, ſhaped like thoſe of the black Poplar, which are of a lucid green, and are placed alternate ſtanding upon ſlender foot-ſtalks. As theſe plants have not yet flowered in England, I can give no account of them, but the ſeed-veſſels are very like thoſe of the ſecond ſort.

This plant will live through the winter in an airy glaſs-caſe, without artificial heat; but in that ſituation they ſhould have very little water, for the plants abound with a milky juice like the Euphorbia, ſo muſt at no ſeaſon of the year have too much wet. If theſe plants, when young, are placed in a very moderate warmth in winter, it will greatly forward their growth, but they muſt not have too much heat, for that will force them too much; and when the plants have obtained ſtrength, they may be treated more hardily. This ſort may be propagated by cuttings during the ſummer ſeaſon; but the cuttings ſhould be laid in a dry place for a few days, when they are taken from the old plants, that their wounded parts may dry and be healed over before they are planted. Theſe muſt be planted in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark; and if the ſeaſon is very warm, the glaſſes ſhould be ſhaded in the heat of the day, and raiſed up to admit freſh air to the cuttings every day; theſe muſt be ſparingly watered. When they have taken root, and begin to ſhoot, they muſt have a greater ſhare of air, and by degrees be inured to the open air; and when their roots have filled the pots, they ſhould be carefully parted, and each planted in a ſeparate pot of the ſame light ſandy earth; then they ſhould be placed on the back part of the ſtove, behind the other plants, where they may be ſcreened from the ſun till they have taken freſh root, after which they may be brought forward, and expoſed gradually to the open air. In the ſummer they ſhould have free air conſtantly in warm weather, but they muſt be ſcreened from heavy rain; and in winter placed in an airy glaſs-caſe, where they may enjoy the ſun, and during that ſeaſon have very little wet.

CLYPEOLA. Lin. Gen. Plant. 723. Jonthlaſpi. Tourn. Inſt. R. H. tab. 99. Treacle Muſtard.

The CHARACTERS are,

The flower hath a permanent empalement, compoſed of four oblong oval leaves. It hath four oblong entire petals, placed in form of a croſs, and ſix ſtamina which are ſhorter than the petals, two of which ſtanding oppoſite are ſhorter than the other, terminated by ſingle ſummits. In the center is ſituated a roundiſh compreſſed germen, ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes an orbicular pod, which is compreſſed, erect, and indented at the top, with a longitudinal fiſſure, opening in two cells, containing round compreſſed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifteenth claſs, intitled Tetradynamia ſiliculoſa, the flower having four long and two ſhorter ſtamina, and the ſeeds growing in ſhort pods.

The SPECIES are,

1. CLYPEOLA (*Jonthlaſpi*) ſiliculis unilocularibus monoſpermis. Hort. Cliff. 329. *Clypeola with pods, having but one cell and a ſingle ſeed.* Jonthlaſpi minimum ſpicatum lunatum. Col. Ecp. 1. *Leaſt Buckler Muſtard with ſpiked flowers.*
2. CLYPEOLA (*Maritima*) ſiliculis bilocularibus ovatis diſpermis. Sauv. Monſp. 71. *Clypeola with oval pods having two cells and two ſeeds.* Thlaſpi Alyſſon dictum maritimum. C. B. P. 107.

This genus of plants was named Jonthlaſpi by Fabius Columna, and the ſame title was continued by Dr. Tournefort, and other late writers on botany before Dr. Linnæus, who has altered the name to this of Clypeola.

The firſt ſort is a low annual plant, which ſeldom riſes more than four inches high; the ſlender branches commonly lie proſtrate on the ground; theſe are garniſhed with ſmall leaves, narrow at their baſe, but are broader at their ends, where they are obtuſe. The flowers are produced in ſhort cloſe ſpikes at the extremity of the branches, which are ſmall, yellow, and compoſed of four petals, placed in form of a croſs; theſe are ſucceeded by orbicular compreſſed ſeed-veſſels, each having one cell, containing a ſingle ſeed. It flowers in June and July, and the ſeeds ripen in autumn.

The ſecond ſort is perennial. This ſends out from the root ſeveral ſlender branches, which divide again into many ſmaller, that lie proſtrate, garniſhed with very narrow hoary leaves, ſitting cloſe to the branches. The flowers are produced in ſpikes at the end of the branches; theſe are ſmall, yellow, and ſhaped like thoſe of the other ſort, but the ſpikes terminate in a roundiſh bunch. It flowers in June, and the ſeeds ripen in autumn.

Theſe two ſorts are low plants, which grow naturally in the ſouth of France, Spain, and Italy, and are preſerved in botanic gardens for the ſake of variety, but have little beauty; their leaves and ſtalks are of a hoary white, which is much lighter in the warm countries

countries than in England; theſe are propagated by ſeeds, which ſhould be ſown upon a border of light earth where they are to remain, and will require no other culture, but to thin them if they come up too cloſe, and keep them clean from weeds. The ſeeds may be ſown either in the ſpring or autumn; thoſe which are ſown in autumn will grow much larger, and flower earlier than thoſe which are ſown in the ſpring, and from them there will be a greater certainty of having ripe ſeeds. If the ſeeds ſcatter, the plants will come up, and, if kept clean from weeds, they will thrive without farther care.

The ſecond ſort is a perennial plant, ſo ſhould be ſown upon a warm border and on a dry ſoil. This grows naturally on the borders of the ſea, in the ſouth of France and Italy; but when it is cultivated in a garden, if the ſoil is rich and moiſt, the plants generally grow luxuriant in ſummer, and are thereby too replete with moiſture, ſo that they are frequently killed by the froſt in winter; but when they grow on a poor, dry, gravelly ſoil, their ſtalks will be ſhort, ligneous, and tough, ſo will endure the cold of this climate, and continue ſeveral years. This is propagated by ſeeds, which ſhould be ſown where the plants are deſigned to remain; or if any of them are removed, it ſhould be done when the plants are young, for they do not bear tranſplanting well, when they are grown pretty large.

CNEORUM. Lin. Gen. Plant. 47. Chamelæa. Tourn. Inſt. R. H. 651. tab. 421. Widow-wail.

The CHARACTERS are,

The flower hath a ſmall permanent empalement, inaented in three parts. It hath three narrow oblong petals, which are erect, and three ſtamina which are ſhorter than the petals, terminated by ſmall ſummits. In the center is ſituated an obtuſe three-cornered germen, ſupporting a firm erect ſtyle, crowned by a trifid ſpreading ſtigma. The germen afterward becomes a globular dry berry, with three lobes, having three cells, each containing one round ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's third claſs, intitled Triandria Monogynia, the flower having three ſtamina and one ſtyle.

We have but one SPECIES of this genus, viz.

CNEORUM (*Tricoccum*). Hort. Cliff. 18. Widow-wail. Chamelæa Tricoccos of Dodonæus and Caſpar Bauhin.

This is an humble ſhrub, which ſeldom riſes more than two feet and a half high in this country, but ſpreads out on every ſide with many lateral branches, ſo as to form a thick buſh. The ſtems are ligneous, and almoſt as hard as thoſe of the Box-tree, and the wood is of a pale yellow colour under the bark: the branches are garniſhed with thick ſtiff leaves, of an oblong oval ſhape, about an inch and a half long, and a quarter of an inch broad, of a dark green colour, having a ſtrong vein or rib through the middle. The flowers are produced ſingle from the wings of the leaves, toward the extremity of the branches, which are of a pale yellow colour, compoſed of three petals, which ſpread open, and a round germen at the bottom, having a ſingle ſtyle, which doth not riſe above half the length of the ſtamina, which are three in number, ſtanding erect, and are ſituated between the petals. After the flowers are fallen, the germen becomes a fruit, compoſed of three ſeeds joined together after the ſame manner as thoſe of Tithymalus or Spurge; theſe are firſt green, afterwards turn of a brown colour, and when ripe are black. The flowers begin to appear in May, and are ſucceeded by others during the ſummer months; and, when the autumn proves favourable, theſe ſhrubs will continue in flower till the end of October.

As this is a low evergreen ſhrub, it may be very ornamental, if placed in the front of plantations of evergreen trees and ſhrubs; for as the branches grow pretty compact, and are well garniſhed with leaves, it will hide the ground between the taller ſhrubs better than moſt other plants; and, being a durable ſhrub, will not want to be removed: it riſes better from ſcattered ſeeds, than if ſown with care.

This was formerly preſerved in green-houſes, and thought too tender to live in the open air in England; but of late years people have planted it in the full ground, where it reſiſts the cold of our ordinary winters very well, and is ſeldom injured but by extreme hard froſts; nor do theſe kill the plants which grow upon dry, rocky, or rubbiſhing ſoils, where their ſhoots are generally ſhort and firm; but in moiſt rich ground, where the ſhoots are more luxuriant, they are ſometimes injured.

It is propagated by ſeeds, which ſhould be ſown in autumn ſoon after they are ripe, and then the plants will come up the following ſpring; whereas thoſe which are not ſown till the ſpring, will remain a year in the ground, and often miſcarry: theſe ſeeds may be ſown in a bed of common earth, covering them half an inch deep, and will require no other care but to keep the plants clear from weeds the following ſummer; and in the autumn following, the plants may be tranſplanted where they are to remain.

CNICUS. Lin. Gen. Plant. 833. Tourn. Inſt. R. H. 450. tab. 257. Bleſſed Thiſtle.

The CHARACTERS are,

The empalement of the flower is compoſed of many oval ſcales, placed over each other; thoſe toward the top are terminated by branching ſpines. The flower is compoſed of ſeveral hermaphrodite florets, which are uniform; theſe are funnel-ſhaped, and cut at the top into five equal ſegments, ſtanding erect, each having five ſhort hairy ſtamina, terminated by cylindrical ſummits. In the center is ſituated a ſhort germen, crowned with down, ſupporting a ſlender ſtyle, terminated by an oblong ſtigma. The germen afterward becomes a ſingle ſeed, crowned with down, and ſhut up in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Æqualis. The plants of this ſection have only hermaphrodite flowers, which are fruitful.

The SPECIES are,

1. CNICUS (*Eriſithales*) caule erecto, foliis inferioribus laciniatis, ſuperioribus integris concavis. Hort. Cliff. 394. *Cnicus with an upright ſtalk, whoſe lower leaves are laciniated, the upper entire and concave.* Cnicus pratenſis, Acanthi folio, flore flaveſcente. Tourn. Inſt. 450.
2. CNICUS (*Spinoſiſſimus*) foliis amplexicaulibus, ſinuato-pinnatis, ſpinoſis, caule ſimplici, floribus ſeſſilibus. Lin. Sp. Plant. 826. *Cnicus with winged, ſinuated, prickly leaves embracing the ſtalk, and flowers ſitting cloſe on the top.* Cirſium Alpinum ſpinoſiſſimum, floribus ochro-leucis inter flaveſcentia folia congeſtis. Haller. tab. 20.
3. CNICUS (*Cernuus*) foliis cordatis, petiolis criſpis ſpinoſis amplexicaulibus, floribus cernuis. Hort. Upſal. 251. *Cnicus with heart-ſhaped leaves, having curled prickly foot-ſtalks which embrace the ſtalks, and a nodding flower.* Carduus foliis ex cordato-lanceolatis, margine ſerratis & ſpinoſis, ſquamis calycum membranaceis, laceris ſpinoſis, capitulis nutantibus. Flor. Sib. 2. p. 47.

The firſt ſort grows naturally in the northern parts of Europe. Mr. Ray found it growing on the Rhine near Baſil. This hath a perennial root, which ſends out many long jagged leaves, ſpreading on every ſide near the ground, ſo as to form a thick tuft; theſe are jagged almoſt to the midrib, in form of a winged leaf. The ſtalks are ſtriated, ſmooth, and riſe above four feet high, dividing at the top into ſmaller branches: the leaves which grow upon the ſtalks are entire, heart-ſhaped, concave, and embrace the ſtalks, and are ſawed on their edges, each indenture ending in a weak ſpine: the ſtalks are terminated by large heads of flowers, growing in cluſters; they are of a whitiſh yellow colour, and incloſed in a ſcaly empalement, and are ſucceeded by ſmall oblong ſeeds, crowned with a briſtly down. It flowers in June, and the ſeeds ripen in autumn.

This ſort may be propagated by ſeeds, or parting the roots; the latter is commonly practiſed where there are any of the plants, but the ſeeds are more eaſily conveyed to a diſtant place. The beſt time to part the roots is in autumn; it delights in ſhade, and requires no farther care but to keep it clean from weeds.

The ſecond ſort grows naturally on the Alps, and on the mountains of Auſtria. This riſes with an upright ſingle ſtalk near four feet high, garniſhed with ſinuated leaves, which are very prickly, and embrace the ſtalks with their baſe. The flowers are produced at the top of the ſtalk, ſurrounded by a cluſter of broad prickly leaves, ſitting cloſe to the ſtalk; they are of a whitiſh yellow, and appear at the ſame time with the former ſort. It is a perennial plant, which may be propagated in the ſame manner as the former, and requires a moiſt ſoil and a ſhady ſituation.

The third ſort grows naturally in Siberia, from whence the ſeeds were ſent to the imperial garden at Peterſburgh, where they ſucceeded, and produced ſeeds, part of which were ſent me by the profeſſor of botany; this hath a perennial root, compoſed of thick fleſhy fibres. The leaves which riſe immediately from the root are near a foot long, and near ſix inches broad in the middle, diminiſhing toward each end, and at a little diſtance from the baſe are much contracted, but are wider at the end; theſe have ſcarce any foot-ſtalks; they are of a deep green on their upper ſide, but white on their under, and ſharply ſawed on their edges. The ſtalks riſe more than ſix feet high, ſending out on each ſide ſmall branches above a foot long; the ſtalks are ſtriated, and of a reddiſh colour; they are garniſhed with heart-ſhaped leaves, which almoſt embrace the ſtalks with their baſe, and are of the ſame colour with thoſe below; each branch is terminated by one large globular head of yellowiſh flowers, included in a ſcaly empalement, each ſcale ending with a ſharp ſpine. This flowers in June, and the ſeeds ripen in autumn. It may be propagated in the ſame manner as the two former ſorts, but requires a moiſt ſoil and ſhady ſituation; and if the weeds are kept down, there will be no farther care required. The inhabitants of Siberia eat the tender ſtalks of this plant, when boiled, inſtead of other vegetables.

This is a perennial plant, which may be propagated by parting the roots: the beſt time for doing of this is in autumn, that the plants may get good root in winter; for thoſe which are tranſplanted in the ſpring, do not flower well the firſt year, unleſs they are planted in a moiſt ſoil. As theſe plants grow very large, they are not proper furniture for ſmall gardens, where they will take up too much room; for they ſhould not be planted nearer than four feet from each other, for if they are too near any other plants, they will rob them of their nouriſhment; for the roots of theſe extend to a great diſtance, ſo that two or three of theſe plants, for variety, are ſufficient for any garden, which may be planted at a diſtance from choicer plants.

It is alſo propagated by ſeeds, which may be ſown in the ſpring on a bed of common ground, in the ſame manner as the other ſorts; and will only require to be thinned, and kept clean from weeds till autumn, when they may be tranſplanted where they are deſigned to remain.

COA. See HIPPOCRATEA.

COAST-MARY. See TANACETUM.

COCCIGRIA. See RHUS.

COCHLEARIA. Lin. Gen. Plant. 720. Tourn. Inſt. R. H. 215. tab. 101. [ſo called of Cochleare, *Lat.* a ſpoon, becauſe the leaves of this plant are hollowed like a ſpoon.] Spoonwort, or Scurvy Graſs.

The CHARACTERS are,

The empalement of the flower is compoſed of four oval concave leaves. The flower hath four petals, placed in form of a croſs, which ſpread open, and are twice as large as the leaves of the empalement; it hath ſix ſtamina, four of which are longer than the other two; theſe are terminated by obtuſe compreſſed ſummits. The germen is heart-ſhaped, ſupporting a ſhort ſingle ſtyle, crowned by an obtuſe ſtigma: this afterward becomes a gibbous, heart-ſhaped, compreſſed pod, faſtened to the ſtyle, having two cells, in each of which are lodged four roundiſh ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliculoſa. The flowers of this claſs have four long and two ſhort ſtamina, and thoſe of this ſection have very ſhort pods.

The SPECIES are,

1. COCHLEARIA (*Officinalis*) foliis radicalibus ſubrotundis, caulinis oblongis ſubſinuatis. Flor. Lapp. 256. *Scurvy Graſs whoſe lower leaves are roundiſh, and thoſe on the ſtalks oblong and ſinuated.* Cochlearia folio ſubrotundo. C. B. P. 110. *Round-leaved Scurvy Graſs.*
2. COCHLEARIA (*Anglica*) foliis ovato-lanceolatis, ſinuatis. Flor. Ang. 248. *Scurvy Graſs with oval ſpear-ſhaped leaves, which are ſinuated.* Cochlearia folio ſinuato. C. B. P. 110. *Sea Scurvy Graſs.*
3. COCHLEARIA (*Grænlandica*) foliis reniformibus, carnoſis integerrimis. Hort. Cliff. 498. *Scurvy Graſs with kidney-ſhaped leaves, which are fleſhy and entire.* Cochlearia minima ex montibus Walliæ. Sher. Boerh. Ind. alt. 2. p. 10.
4. COCHLEARIA (*Danica*) foliis haſtatis, angulatis. Flor. Suec. 196. *Scurvy Graſs with angular ſpear-ſhaped leaves.* Cochlearia Armorica. H. R. Par. *Daniſh, or Ivy-leaved Scurvy Graſs.*
5. COCHLERIA (*Armoracia*) foliis radicalibus lanceolatis, crenatis, caulinis inciſis. Hort. Cliff. 332. *Scurvy Graſs whoſe lower leaves are ſpear-ſhaped and crenated, and thoſe on the ſtalks jagged.* Raphanus Ruſticanus. C. B. P. 96. *Horſe Radiſh.*
6. COCHLEARIA (*Glaſtifolia*) foliis caulinis cordato-ſagittatis, amplexicaulibus. Hort. Cliff. 332. *Scurvy Graſs whoſe upper leaves are arrow-pointed, heart-ſhaped, and embrace the ſtalks.* Cochlearia altiſſima glaſti folio. Inſt. R. H. 216.

The firſt ſort grows naturally on the ſea-ſhore in the north of England, and in Holland, but is cultivated for uſe in the gardens near London. This is an annual plant, for the ſeeds are ſown, and the plants decay within the compaſs of one year, but the ſeeds ſhould be ſown early in autumn; this hath a fibrous root, from which ariſe many round ſucculent leaves, which are hollowed like a ſpoon; the ſtalks riſe from ſix inches to a foot high; theſe are brittle, and garniſhed with leaves, which are oblong and ſinuated. The flowers are produced in cluſters at the end of the branches, conſiſting of four ſmall white petals, which are placed in form of a croſs, and are ſucceeded by ſhort, roundiſh, ſwelling ſeed-veſſels, having two cells, divided by a thin partition; in each of theſe is lodged four or five roundiſh ſeeds. It flowers in April, and the ſeeds ripen in June, ſoon after which it decays.

This ſort is propagated in gardens for medicinal uſes, which is done by ſowing the ſeeds in July, ſoon after they are ripe, in a moiſt ſhady ſpot of ground; and when the plants are come up, they ſhould be thinned, ſo as to be left at about four inches diſtance each way. The plants that are taken out may be tranſplanted into other ſhady borders, if there is occaſion for them, otherwiſe they may be hoed out (as is practiſed for Onions, Carrots, &c.) and at the ſame time all the weeds may be hoed down, ſo as to clear the plants entirely from them, that they may have room to grow ſtrong. In the ſpring theſe plants will be fit for uſe; and thoſe that are ſuffered to remain will run up to ſeed in May, and perfect their ſeeds in June. If this plant is ſown in the ſpring, the ſeeds ſeldom grow well, therefore the beſt time is ſoon after they are ripe. The plants rarely live after producing ſeeds, ſo that it ſhould be ſown every year, to have it for uſe.

The Sea Scurvy Graſs is alſo uſed in medicine; but this grows in the ſalt marſhes in Kent and Eſſex, where

where the ſalt water overflows it almoſt every tide, and can rarely be made to grow in a garden, or at leaſt to laſt longer there than one year; but it being eaſily gathered in the places before-mentioned, the markets are ſupplied from thence by the herb-women, who make it their buſineſs to gather herbs.

This ſort differs from the firſt in the ſhape of its leaves, theſe being longer, and ſinuated on their edges. It flowers a little later in the ſeaſon; both theſe ſorts are uſed in medicine.

The little Welch Scurvy Graſs is a biennial plant, and may be preſerved in a garden, if planted in a ſtrong ſoil and a ſhady ſituation. This is preſerved in curious gardens of plants, but is not of any uſe in medicine, though it is by far the warmeſt and moſt pungent of all the ſorts. This grows plentifully in Muſcovy, as alſo in Davis's Streights.

The fourth ſort is a low trailing plant, whoſe ſtalks grow ſix inches long, and lie proſtrate on the ground; the leaves are angular, and in ſhape like thoſe of Ivy. This is found growing naturally in ſome parts of England, and is annual. It flowers and ſeeds about the ſame time as the firſt ſort.

The ſixth ſort is a biennial plant, which uſually grows about a foot and a half high, with upright ſtalks, garniſhed with angular heart-ſhaped leaves, embracing the ſtalks with their baſe; the flowers are produced in looſe ſpikes at the end of the branches; they are very ſmall, white, and are ſucceeded by ſhort ſwelling pods filled with round ſeeds. It flowers in May, and the ſeeds ripen in July and Auguſt. This may be propagated by ſeeds as the common ſort; and if ſown in autumn, will more certainly ſucceed than in the ſpring.

The Horſe Radiſh is propagated by cuttings or buds from the ſides of the old roots. The beſt ſeaſon for this work is in October or February; the former for dry lands, the latter for moiſt; the ground ſhould be trenched at leaſt two ſpits deep, or more if it will allow of it. The manner of planting it is as follows: provide yourſelf with a good quantity of offsets, which ſhould have a bud upon their crowns, but it matters not how ſhort they are; therefore the upper part of the roots which are taken up for uſe, may be cut off about two inches long with the bud to it, which is eſteemed the beſt for planting. Then make a trench ten inches deep, in which you ſhould place the offsets at about four or five inches diſtance each way, with the bud upward, covering them up with the mould that was taken out of the trench: then proceed to a ſecond trench in like manner, and continue the ſame till the whole ſpot of ground is planted. After this, level the ſurface of the ground even, obſerving to keep it clear from weeds, until the plants are ſo far advanced, as to be ſtrong enough to overbear and keep them down. With this management the roots of the Horſe Radiſh will be long and ſtrait, and free from ſmall lateral roots, and the ſecond year after planting will be fit for uſe. 'Tis true, they may be taken up the firſt year, but then the roots will be but ſlender; therefore it is the better way to let them remain until the ſecond year. The ground in which this is planted ought to be very rich, otherwiſe the roots will make but a ſmall progreſs.

COCOS. Lin. Gen. Plant. 1223. The Cocoa Nut.

The CHARACTERS are,

There are male and female flowers on the ſame tree. The univerſal ſpatha has one valve. The empalement conſiſts of three ſmall-coloured concave leaves; the flower has three oval ſpreading petals, and ſix ſtamina the length of the corolla, terminated by triangular ſummits. The germen is ſcarce diſcernible, ſupporting three ſhort ſtyles, crowned by obſolete ſtigma; theſe are barren. The female flowers are included in the like ſpatha. The empalement is three-leaved, which is coloured and permanent; they have three petals to the flowers, which are larger than the empalement, and an oval germen without a ſtyle, with a three-lobed ſtigma. The nut is large, triangular, and is perforated by three holes at the end.

This genus is placed by Linnæus in his appendix under the title of Monoica Hexandria, the ſame plants having hermaphrodite and female flowers, the hermaphrodite having ſix ſtamina.

We know but one SPECIES of this genus, viz.

Cocos (*Nucifera*) frondibus pinnatis, foliolis enſiformibus replicatis. Jacq. Hiſt. 168. *Cocoa Nut with winged branches, whoſe ſmall leaves are ſword-ſhaped and folded.* Palma Indica coccifera anguloſa. C. B. P. 502.

This tree is cultivated in both Indies, but is generally ſuppoſed to grow naturally in the Maldives, and other deſart iſlands of the Eaſt-Indies. The trees grow to a great height in their native places, but their ſtems are compoſed of ſtrong fibres like net-work, which lie in ſeveral lamina over each other, out of which come the branches (or rather leaves,) which grow twelve or fourteen feet long. The midrib is garniſhed with ſword-ſhaped ſmall leaves, whoſe borders fold backward: the firſt leaves which puſh out from the nut when planted, are very different from thoſe which are afterward produced; for they are very broad, and have many folds in each: whereas, the after leaves have a ſtrong midrib, of great length, on which the ſmaller lobes are placed alternately; theſe lobes are from ſix to eight or nine inches long, and are almoſt triangular, having very ſharp points, and are very ſtiff. The flowers come out round the top of the trunk of the tree in large cluſters; they are incloſed in a large ſpatha or ſheath, and the nuts afterward are formed in large cluſters; theſe are included in large net-work covers, which adhere cloſely about them; the nut has a hard ſhell, with three holes at the upper end. The kernel is large, ſweet, and the lower part of the ſhell, when firſt taken from the tree, is filled with a pale liquor, which the inhabitants of the countries where the trees grow, call milk, and they are very fond of it. From this milk I have been informed by perſons of credit, there has been exceeding good arrack diſtilled in Jamaica.

The plants are propagated by planting the nuts in ſuch places where they are deſigned to remain; for the plants will not bear tranſplanting, unleſs it is performed while they are very young, for their roots ſhoot deep and wide; ſo that if theſe are cut or broken, the plants ſeldom ſurvive it, which is generally the caſe with moſt of the kind of Palms.

Where any perſons are deſirous of having a plant or two of this ſort, they ſhould procure ſome freſh nuts from the neareſt place of their growth, which, on their arrival in England, ſhould be buried in a warm bed of tanners bark, laying them on one ſide, that the young ſhoot which comes out from one of the three holes may not be injured by wet, covering them about ſix inches deep with the tan. In this ſituation, if the nuts are good, they will put out ſhoots in ſix weeks or two months, ſo ſhould be then carefully taken up, and each planted in a ſeparate pot filled with kitchen-garden earth, and plunged into the tan-bed in the ſtove, where the plants ſhould always remain, for they are too tender to thrive in any other ſituation; but as the plants advance in their growth, they ſhould be ſhifted into larger pots or tubs, being careful not to cut or tear their roots in the operation.

This is one of the moſt uſeful trees to the inhabitants of America, who make many neceſſary utenſils from the ſeveral parts of it. The outer cover of the nuts is made into cordage; the ſhells are converted into drinking bowls; the kernel of the nuts affords them a wholeſome food, and the milk a cooling liquor. The leaves of the tree are uſed for thatching of their houſes, and are alſo wrought into baſkets, and many other things which are made of Oſiers in Europe.

COCCOLOBA, Sea-ſide Grape.

The CHARACTERS are,

The empalement is of one leaf, cut into five parts, which ſpread open and are permanent. The flower has no corolla, but hath eight awl-ſhaped ſpreading ſtamina, terminated by roundiſh twin ſummits. It has an oval three-cornered germen, ſupporting three ſhort ſpreading ſtyles, crowned by ſimple ſtigmas. The empalement afterward becomes a thick berry, incloſing an oval-

pointed nut, with one cell, having a ſingle ſeed of the ſame form.

This genus of plants is ranged in the third ſection of Linnæus's eighth genera, intitled Octandria Trigynia, the flowers having eight ſtamina and three ſtyles.

The SPECIES are,

1. COCCOLOBA (*Uvifera*) foliis cordato-ſubrotundis nitidis. Lin. Sp. 523. *Sea-ſide Grape with neat, roundiſh, heart-ſhaped leaves.* Guajabara racemoſa, foliis coriaceis ſubrotundis. Plum. Nov. Gen.
2. COCCOLOBA (*Rubeſcens*) foliis orbiculatis pubeſcentibus. Lin. Sp. 523. *Sea-ſide Grape with orbicular hairy leaves.* Scortea arbor Americana, ampliſſimis foliis averſa parte nervis extantibus. Pluk. Phyt. 222. f. 8.
3. COCCOLOBA (*Punctata*) foliis lanceolato-ovatis. Lin. Sp. 523. *Sea-ſide Grape with oval ſpear-ſhaped leaves.* Uvifera arbor Americana, fructu aromatico punctato. Pluk. Alm. 394.
4. COCCOLOBA (*Excoriato*) foliis ovatis, ramis quaſi excorticatis. Lin. Sp. 524. *Sea-ſide Grape with oval leaves, and the branches caſting their bark.* Guajabara alia racemoſa, foliis oblongis. Plum. Icon. 146. f. 1. *Called Mountain Grape.*
5. COCCOLOBA (*Tenuifolia*) foliis ovatis membranaceis. Amœn. Acad. 5. p. 397. *Sea-ſide Grape with oval membranaceous leaves.*

The firſt ſort riſes with many ligneous ſtems to the height of ten or twelve feet, having ſeveral knots or joints, covered with a gray bark: at each joint is ſet on one large, roundiſh, ſmooth leaf, a little indented at the top. The flowers come out from the foot-ſtalks of the leaves, in long bunches like thoſe of Currants; they have no petals, but the empalement is cut into five ſegments, including eight awl-ſhaped ſtamina, terminated by twin ſummits. The germen afterward becomes a ſucculent berry, including an oval-pointed nut, having one ſeed of the ſame form.

The ſecond ſort ſeldom riſes ſo high as the firſt, but divides into ſeveral lateral branches, garniſhed with large roundiſh leaves, having ſeveral deep veins; the flowers and fruit come out from the ſide of the branches in like manner as thoſe of the firſt, but are larger.

The third ſort is a lower ſhrub than either of the former; the leaves are oval and ſpear-ſhaped; the fruit is ſmaller, ſomewhat aromatic, and ſpotted; theſe proceed from the ſide of the branches in like manner as the former ſorts.

The fourth ſort grows to a much larger ſize than any of the other; the leaves of this are much larger, of an oblong oval form, very ſmooth, and of a lucid green: from the wings of the leaves, the flowers and fruit are produced, which are in form like thoſe of the other ſorts, but are larger.

The fifth ſort is of humbler growth than either of the former; the leaves are membranaceous, of an oval form; the flowers and fruit are ſmaller than thoſe of the other ſorts. Theſe plants all grow naturally in the warm iſlands of America; ſome of them on the ſea-ſhores, where they form very cloſe, almoſt impenetrable thickets; the fruit of the firſt ſort are frequently eaten by the inhabitants of the iſlands, but eſpecially by the negroes. Thoſe of the other ſorts are food for birds.

The plants of all the ſorts are eaſily propagated by ſeeds, when they can be obtained freſh from the places of their natural growth (for none of the ſorts have as yet produced either fruit or flowers in England.) The ſeeds ſhould be ſown in ſmall pots filled with earth from the kitchen-garden, and plunged into a hot-bed. If the ſeeds are good, and the bed of a proper temperature of warmth, the plants will appear in five or ſix weeks after, which will be fit to tranſplant in about a month after; when they ſhould be ſhaken out of the pots, ſeparating their roots carefully, and each planted in a ſeparate ſmall pot filled with the like earth, plunging them into a hot-bed of tanners bark, being careful to ſhade them in the day-time, until they have taken new root; after which they

ſhould be treated in the ſame way as other tender exotic plants, which require to be kept conſtantly in the bark-ſtove.

CODLIN-TREE. See MALUS.

COFFEA. Lin. Gen. Plant. 209. Juſſ. Act. Reg. Scien. 1713. Jaſminum. Com. Cat. The Coffee-tree.

The CHARACTERS are,

The flower hath a ſmall empalement divided into four parts, ſitting upon the germen. It hath one petal which is funnel-ſhaped, having a narrow cylindrical tube, which is much longer than the empalement, but is plain at the top, where it is indented in five parts. It hath five ſtamina which are faſtened to the tube, and are terminated by long ſlender ſummits. The roundiſh germen ſupports a ſingle ſtyle, crowned by two thick reflexed ſtigmas. The germen afterward becomes an oval berry, containing two hemiſpherical ſeeds, plain on one ſide, and convex on the other.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle; it hath been generally included in the genus of Jaſmines; but as the flowers of Jaſmine have but two ſtamina, ſo by Linnæus's ſyſtem, this is ſeparated and ranged in another claſs.

We have but one SPECIES of this genus, viz.

COFFEA (*Arabica.*) Hort. Cliff. 59. The Coffee-tree. Jaſminum Arabicum Caſtaneæ folio, flore albo odoratiſſimo, cujus fructus Coffea in officinis dicuntur nobis. Juſſ. Act. Par. 1713.

This tree is ſuppoſed to be a native of Arabia Felix, where it was firſt cultivated for uſe, and to this day, is the country from whence the beſt Coffee is brought to Europe, though the plant is now propagated in many parts of India and America; but the produce of thoſe countries being greatly inferior to that of Arabia, hath occaſioned its preſent diſrepute in England, ſo that it is ſcarce worth importing; but this might be remedied, if the Coffee planters in the Weſt Indies could be prevailed on to try a few experiments, which I ſhall hereafter propoſe, being founded on thoſe which have been made in England, upon the berries produced here. But I ſhall firſt treat of the plant, with its culture in England.

This is a low tree in the native country of its growth, where it ſeldom riſes more than ſixteen or eighteen feet high, but in England I have not ſeen any above ten or twelve. The main ſtem grows upright, and is covered with a light brown bark; the branches are produced horizontally and oppoſite, which croſs each other at every joint, ſo that every ſide of the tree is fully garniſhed with them: the lower branches being the longeſt, the others gradually decreaſing to the top, form a ſort of pyramid; the leaves are alſo produced oppoſite; theſe when fully grown, are about four or five inches long, and one inch and a half broad in the middle, decreaſing toward each end; the borders are waved, and the ſurface is of a lucid green. The flowers are produced in cluſters at the baſe of the leaves, ſitting cloſe to the branches; theſe are tubulous, ſpread open at the top, where they are divided into five parts, and are of a pure white, with a very grateful odour, but of ſhort duration: they are ſucceeded by oval berries, which are firſt green, when fully grown, they turn red, and afterward change to black when fully ripe; theſe have a thin pulpy ſkin, under which are two ſeeds joined, which are flat on the joined ſides, with a longitudinal furrow, and convex on their outer ſide.

As the Coffee-tree is an Evergreen, it makes a beautiful appearance at every ſeaſon in the ſtove, but particularly when it is in flower; and alſo when the berries are red, which is generally in the winter; ſo that they continue a long time in that ſtate, therefore there is ſcarce any plant that more deſerves a place in the ſtove than this.

It is propagated by the berries, which muſt be ſown ſoon after they are gathered from the trees, for if they are kept out of the ground a ſhort time they will not grow. I have frequently ſent the berries abroad

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by the poſt, but when they have been a fortnight in their journey they have all failed; and this has conſtantly happened every where, for the berries which were ſent from Holland to Paris did not grow, nor did thoſe which were ſent from Paris to England grow; ſo that wherever theſe trees are deſired, the young plants muſt be ſent, if it be at any diſtance from the place where they grow.

The berries ſhould be planted in ſmall pots, filled with light kitchen-garden earth, and plunged into a hot-bed of tanners-bark; the pots muſt be watered gently once or twice a week, but the earth muſt not be too moiſt, leſt it rot the berries. If the bed be of a proper temperature of warmth, the plants will appear in a month or five weeks time, and in about two months more will be fit to tranſplant. For as many of the berries will produce two plants, ſo the ſooner they are parted, the better their roots will be formed; for when they grow double till they have made large roots, they will be ſo intermixed and entangled, as to render it difficult to ſeparate them without tearing off their fibres, which will greatly prejudice the plants. When theſe are tranſplanted, they muſt be each put into a ſeparate ſmall pot, filled with the ſame earth as before, and plunged into the tan-bed again; which ſhould be ſtirred up to the bottom, and if required, ſome new tan ſhould be mixed with it, to renew the heat. Then the plants ſhould be gently watered, and the glaſſes of the hot-bed muſt be ſhaded every day till they have taken new root; after which the plants ſhould have free air admitted to them every day, in proportion to the warmth of the ſeaſon: during the ſummer they will require frequently to be refreſhed with water, but they muſt not have it in too great plenty: for if their roots are kept too moiſt, they are very ſubject to rot, then the leaves will ſoon decay and drop off, and the plants become naked; when this happens, they are ſeldom recovered again. The firſt ſign of theſe plants being diſordered, is, their leaves ſweating out a clammy juice, which attracts the ſmall inſects, that too frequently infeſt the plants in ſtoves; when they are not in health, theſe inſects cannot be deſtroyed, till the plants are recovered to vigour: for although the plants are ever ſo carefully waſhed and cleaned from them, yet they will be ſoon attacked by them again, if they are not recovered to health, for theſe inſects are never ſeen upon any of the plants while they are in perfect vigour; but when they are diſordered, they ſoon ſpread over all the leaves and tender parts of the plants, and multiply exceedingly; ſo that upon the firſt attack, the plants ſhould be ſhifted into freſh earth, and all poſſible care taken to recover them, without which all the waſhing and cleaning of the plants will be to little purpoſe. The diſorders attending the Coffee-trees, generally proceed from either being put into pots too large for them, nothing being of worſe conſequence than over potting them; or from the earth being too ſtiff, or overhung by other plants, or being over watered. If theſe are properly taken care of, and the ſtove kept always in a proper temperature of heat, the plants will thrive, and produce plenty of fruit.

I have made trial of ſeveral compoſitions of earth for theſe plants, but have found none of them equal to that of a kitchen-garden, where the ſoil is naturally looſe, and not ſubject to bind; and if it has conſtantly been well wrought and properly dunged, this without any mixture is preferable to any other.

The plants ſhould not be too often tranſplanted, for that will greatly retard their growth. If they are new potted twice a year at moſt, it will be ſufficient; though unleſs the plants make great progreſs, they will not require to be removed oftener than once in a year, which ſhould be in ſummer, that they may have time to get good roots again before winter. During the warm weather in ſummer, theſe plants ſhould have a large ſhare of air, but they muſt not be wholly expoſed abroad at any ſeaſon: for although they may have the appearance of thriving in the open air during the heat of ſummer, yet when they are removed into the ſtove again, their leaves will fall off, and the plants will make but an indifferent appearance the following winter, if they ſhould ſurvive it: therefore it is the better method to keep them conſtantly in the ſtove, and admit a proportionable ſhare of air to them every day, according to the heat of the ſeaſon; they will require water two or three times a week in warm weather, but in the winter they muſt have it more ſparingly; and the ſtove in which they are placed, ſhould be kept to the heat aſſigned for the Ananas upon the botanical thermometors.

There has been ſome of theſe plants propagated by cuttings, and alſo from layers; but theſe are long before they make roots, and the plants ſo raiſed, are never ſo ſtrong and thriving as thoſe which ariſe from berries; therefore where the berries can be procured, it is much the beſt method to propagate the plants by ſeeds.

When the plants are tranſplanted, their roots ſhould not be too much cut or trimmed; the decayed or rotten fibres ſhould be pruned off, and thoſe which are cloſely matted to the ſide of the pots ſhould be trimmed, but not cut too near to the ſtem; for the old fibres do not put out new roots very kindly, eſpecially thoſe which are become tough, ſo that there ſhould always be a ſufficient number of young fibres left to ſupport the plants, till new ones are produced.

The Coffee plants were firſt carried from Arabia to Batavia by the Dutch, and from thence they were afterward brought to Holland, where great numbers of the plants were raiſed from the berries which thoſe plants produced, and from theſe moſt of the gardens in Europe have been furniſhed. A great number of theſe young plants, which were raiſed at Amſterdam, were ſent to Surinam by the proprietors of that iſland, where the trees were ſoon propagated in great plenty, and from thence the plants have been diſperſed to moſt of the iſlands in the Weſt Indies: for as the plants raiſed from the berries, produce fruit in two years from planting, and in the warm countries ſooner, ſo plantations of theſe trees may be ſoon made in any of thoſe countries, where the temperature of the air is proper for their production, but the trees will not grow in the open air any where if there is a winter: ſo that in all countries without the tropics, they cannot be expected to grow abroad.

The French have made great plantations of theſe trees in their ſettlements in the Weſt Indies, and alſo in the iſle of Bourbon, from whence they import great quantities of Coffee annually to France; which although greatly inferior in quality to the Arabian, yet it is conſumed, otherwiſe they would not continue that branch of commerce. In the Britiſh colonies of America, there have been ſome large plantations made of Coffee-trees: and it was propoſed to the parliament, ſome years paſt, to give a proper encouragement for cultivating this commodity in America, ſo as to enable the planters to underſell the importers of Coffee from Arabia. Accordingly there was an abatement of the duty payable on all the Coffee which ſhould be of the growth of our colonies in America, which at that time was ſuppoſed would be a ſufficient encouragement for the planters to improve this branch of commerce: but the productions of thoſe countries, being greatly inferior in quality to that of Arabia, hath almoſt ruined the project; and unleſs the planters can be prevailed on to try ſome experiments to improve its quality, there can be little hope of its becoming a valuable branch of trade; therefore I ſhall beg leave to offer my ſentiments on this article, and ſincerely wiſh what I have to propoſe may be found uſeful for the inſtruction of the Coffee planters; for as my opinion is founded upon experiments, ſo it is not mere theory or ſuppoſition.

The great fault of the Coffee which grows in America, and alſo in the iſle of Bourbon, is the want of flavour, or having a diſagreeable one. The berries

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are much larger than thoſe which are imported from Arabia, and conſequently have not ſo much ſpirit or flavour. This may be owing to ſeveral cauſes, the firſt is that of its growing in a ſoil too moiſt; which is always known to increaſe the ſize of fruit and vegetables, but their quality is greatly diminiſhed thereby. The ſecond is from the gathering of the berries too ſoon; for I have been credibly informed, that it is the conſtant practice of the planters, to gather the fruit when it is red: at which time the berries are much larger, and of greater weight, than thoſe which are permitted to ripen perfectly on the trees, which is not till they are turned black, and their outer pulp becomes dry, and the ſkins ſhrink: then the berries are much ſmaller than before, and the outer cover will eaſily ſeparate from the berry; which I have always been informed, has been the complaint of the planters, that this was with great difficulty and trouble effected. A third cauſe I imgine may be in the drying of the berries when gathered; which muſt be conſtantly attended to, for they cannot be too much expoſed to the ſun and air in the day time, but they muſt be every evening removed under cover, and carefully ſcreened from dews and rain; nor ſhould they be placed near any ſort of liquid or moiſture, for theſe berries are very ſubject to imbibe moiſture, and thereby acquire the flavour of the liquid; or if it be pure water, the berries will be enlarged, and the flavour diminiſhed by it, as from many experiments I can affirm: for a bottle of rum being placed in a cloſet, in which a caniſter of Coffee berries cloſely ſtopped, was ſtanding on a ſhelf at a conſiderable diſtance, in a few days had ſo impregnated the berries, as to render them very diſagreeable; the ſame alſo has happened by a bottle of ſpirits of wine ſtanding in the ſame cloſet with Coffee and Tea, both which were in a few days ſpoiled by it. Therefore from many experiments of this nature, which I have made with Coffee, it appears to me that it ſhould never be brought over in ſhips freighted with rum, nor ſhould the berries be laid to dry in the houſes where the ſugars are boiled, or the rum diſtilled. I have alſo been informed by a gentleman who has a very good eſtate in Jamaica, and who has lived many years in that iſland, that the planters frequently boil the Coffee berries before they are dried. As this information comes from a gentleman of great ſkill and veracity, ſo I cannot doubt of the fact; and if ſo, this alone is ſufficient to ſpoil the beſt Coffee in the world; ſo that I am at a loſs to gueſs the reaſon for this practice, which, as it appears to me, can only be intended to increaſe the weight, therefore muſt be imputed to avarice, the bane of every public good.

There was ſome time paſt an imperfect account printed in the papers, of the cauſe why the American Coffee was not ſo good as that which comes from Arabia; in which it is ſuppoſed, that the goodneſs of the latter proceeded from the length of time which the berries had been kept: therefore the author propoſes that the American Coffee berries ſhould be many years kept, which he ſays will render them equally good. This is contrary to all the experience I have had, or can learn, from thoſe who have ſeen the whole progreſs of Coffee in Arabia, with their manner of drying and packing it to ſend abroad; for two gentlemen who had lived there ſome years aſſured me, that the berries, when firſt gathered, were much better than thoſe which are kept any time. And a curious gentleman who reſided in Barbadoes two years, alſo told me, that he never drank better Coffee in any part of the world, than what he made from the freſh berries which he gathered himſelf, and roaſted as he had occaſion for them; which is alſo confirmed by the trials which have been made with the berries which grow in the ſtoves in England, which make a better flavoured liquor, than the beſt Arabian Coffee berries which can be procured in England; therefore I wiſh thoſe who are inclinable to cultivate theſe trees in America, would make choice of a ſoil rather dry than moiſt, in which the trees will not make ſo great progreſs as thoſe which grow in a wet ſoil, nor will the produce be ſo great; but as the quality of the produce will be ſo much improved, it will certainly be of greater advantage to them.

The next thing is, to permit the berries to remain ſo long upon the trees, till their ſkins are ſhrivelled and turned very black; which it is true will greatly diminiſh their weight, but then the commodity will be more than double the value of that which is gathered ſooner.

When the berries are fully ripe, they ſhould be gathered, or rather ſhaken from the trees, when they are perfectly dry, and ſpread abroad upon cloths in the ſun to dry, carrying them every evening under cover, to prevent the dews from falling on them, or the rain if any ſhould happen: and when they are perfectly dry, they ſhould be carefully packed up in cloths or bags, three or four times double, and conſequently kept in a dry ſituation: and when they are ſhipped for England, it ſhould be on board thoſe veſſels which have no rum, leſt the Coffee ſhould imbibe the flavour, which cannot be prevented when ſtowed in the ſame place. For ſome years paſt, a Coffee ſhip from India had a few bags of pepper put on board, the flavour of which was imbibed by the Coffee, and the whole cargo ſpoiled thereby.

As the quantity of Coffee now conſumed in Britain is very much increaſed of late years, ſo it will certainly be worthy of public conſideration, how far it may be neceſſary to encourage the growth of it in the Britiſh colonies: and certainly it deſerves the attention of the inhabitants of thoſe colonies, to improve this commodity to the utmoſt of their power; and not to have ſo much regard to the quantity, as to the quality of it; for although the former may appear to have the advantage of the latter in point of profit, yet the goodneſs of every commodity muſt always claim the preference, and thereby will be found of more laſting advantage to the cultivator.

COIX. Lin. Gen. Plant. 927. Lachryma Jobi. Tourn. Inſt. R. H. 531. tab. 306. Job's Tears.

The CHARACTERS are,

It hath male and female flowers on the ſame plant; the male flowers are diſpoſed in a looſe ſpike; the chaff of theſe have two valves, incloſing two flowers, the valves are oblong and bearded; the petal has two oval valves, the length of the chaff, with narrow beards: theſe have each three hairy ſtamina, terminated by oblong four-cornered ſummits. There are a few female flowers ſituated at the baſe of the male ſpike in the ſame plant, theſe have bivalvular chaff; the valves are roundiſh, thick, and ſmooth; the petal hath two oval valves, the outer being larger and bearded at both ends. They have a ſmall oval germen, ſupporting a ſhort ſtyle divided into two parts, crowned by two horned ſtigmas which are longer than the flower, and covered with fine hairs; the germen afterward becomes a hard, roundiſh, ſmooth ſeed.

This genus of plants is ranged in the third ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Triandria. The plants of this claſs have male and female flowers on the ſame plant, and the flowers of this ſection have three ſtamina.

The SPECIES are,

1. COIX (*Lachryma Jobi*) ſeminibus ovatis. Hort. Cliff. 434. *Coix with oval ſeeds.* Lachryma Jobi. Cluſ. Hiſt. p. 2. *Job's Tears.*
2. COIX (*Angulatis*) ſeminibus angulatis. Hort. Cliff. 438. *Coix with angular ſeeds.* Lachryma Jobi Americana altiſſima, Arundinis folio & facie. Plum. Cat.

The firſt ſort grows naturally in the iſlands of the Archipelago, and is frequently cultivated in Spain and Portugal, where the poor inhabitants grind the grain to flour in a ſcarcity of corn, and make a coarſe ſort of bread of it.

This is an annual plant, which ſeldom ripen its ſeeds in England, unleſs the ſeaſon proves very warm; from a thick fibrous root is ſent out two or three jointed ſtalks, which riſe near three feet high, garniſhed

niſhed with ſingle, long, narrow leaves at each joint, reſembling thoſe of the Reed; at the baſe of the leaves come out the ſpikes of flowers, ſtanding on ſhort foot-ſtalks; theſe ſpikes are compoſed of male flowers only, and below them is ſituated one or two female flowers; the male flowers decay ſoon after they have ſhed their farina; but the germen of the female flowers ſwell to a large oval ſeed, which is hard, ſmooth, and of a gray colour, greatly reſembling the ſeeds of Gromwel, from whence this plant has been by ſeveral writers titled Lithoſpermum.

Thoſe who are deſirous to cultivate this plant in England, may procure the ſeeds from Portugal, theſe ſhould be ſown on a moderate hot-bed in the ſpring, to bring the plants forward, and afterward tranſplant them on a warm border, allowing each two feet room at leaſt, and when the plants have taken root, they will require no farther care, but to keep them clean from weeds. Theſe will flower about Midſummer, and in warm ſeaſons, the ſeeds will ripen at Michaelmas. There is a variety of this with much broader leaves, which I received from Smyrna ſome years paſt, which did not perfect ſeeds here, ſo I cannot ſay whether it is only a variety, or a different ſort from this.

The ſecond ſort will grow to the height of ſeven or eight feet, and the ſtems become hard, like the Reed, or Indian Corn: theſe branch out, and produce ſeveral ſpikes of flowers; but this ſort will not live in the open air in England, therefore ſhould be plunged into the bark-ſtove, where it will live through the winter, and produce ripe ſeeds the ſecond year; and may be continued longer, if deſired.

COLCHICUM. Lin. Gen. Plant. 415. Tourn. Inſt. R. H. 348. tab. 181, 182. [So called from Colchos, a province of the Levant (now called Mingrelia, becauſe this plant was formerly very common in that place.] Meadow Saffron.

The CHARACTERS are,

The flower hath neither empalement or ſpatha; it hath one petal, riſing with an angular tube from the root, which is divided at the top into ſix oval, concave, erect ſegments; it hath ſix ſtamina which are ſhorter than the petal, terminated by oblong ſummits having four valves. The germen is ſituated in the root, ſupporting three ſlender ſtyles the length of the ſtamina, crowned by reflexed channelled ſtigmas; the germen afterward becomes a capſule with three lobes, having a ſeam on the inſide, dividing it into three cells, which contain ſeveral roundiſh rough ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſixth claſs, intitled Hexandria Trigynia, the flower having ſix ſtamina and three ſtyles.

The SPECIES are,

1. COLCHICUM (*Autumnale*) foliis planis lanceolatis, erectis. Hort. Cliff. 140. *Colchicum with plain, erect, ſpear-ſhaped leaves.* Colchicum commune. C. B. P. 67. *Common Meadow Saffron.*
2. COLCHICUM (*Montanum*) foliis linearibus, patentiſſimis. Lin. Sp. Plant. 342. *Meadow Saffron with very narrow ſpreading leaves.* Colchicum Montanum anguſtifolium. C. B. P. 68. *Narrow-leaved Mountain Meadow Saffron.*
3. COLCHICUM (*Variegatum*) foliis undulatis patentibus. Hort. Cliff. 140. *Meadow Saffron with waved ſpreading leaves.* Colchicum Chionenſe, floribus fritillariæ inſtar teſſulatis, foliis undulatis. Mor. Hiſt. 2. p. 341. *Meadow Saffron of Chios, with chequered flowers like Fritillary, and waved leaves.*
4. COLCHICUM (*Teſſulatum*) foliis planis patentibus. *Colchicum with plain ſpreading leaves.* Colchicum floribus fritillariæ inſtar teſſulatis, foliis planis. Mor. Hiſt. 2. p. 341. *Meadow Saffron, with chequered flowers like Fritillary, and plain leaves.*

There is a greater variety of theſe flowers than any here enumerated, which differ in the colour of their flowers, and other little accidents, which are not laſting, ſo muſt not be ranged as diſtinct ſpecies. But as many of them are cultivated in flower-gardens, I ſhall beg leave to mention thoſe varieties, which are frequently propagated by floriſts. Theſe are moſt of them ſeminal variations from the firſt ſort.

The moſt common Meadow Saffron hath a purpliſh flower.

The Meadow Saffron with white flowers.

Meadow Saffron with ſtriped flowers.

Broad-leaved Meadow Saffron.

Striped-leaved Meadow Saffron.

Many flowered Meadow Saffron.

Meadow Saffron with double purpliſh flowers.

Meadow Saffron with double white flowers.

Meadow Saffron with many white flowers.

The firſt ſort grows naturally both in the weſt and north of England. I have obſerved it in great plenty in the meadows near Caſtle Bromwich, in Warwickſhire, in the beginning of September. The country people call the flowers Naked Ladies, becauſe they come up naked, without any leaves or cover. This hath a bulbous root, about the ſize and ſhape of thoſe of the Tulip, but not ſo ſharp-pointed at the top, the ſkins or cover is alſo of a darker colour. Theſe bulbs are renewed every year, for thoſe which produce the flowers decay, and new roots are formed above. The flowers come out in autumn; theſe ariſe with long ſlender tubes from the root, about four inches high, ſhaped like thoſe of the Saffron, but larger; they are of a pale purple colour, and divided into ſix parts at the top, which ſtand erect; the number of flowers is generally in proportion to the ſize of the roots, from two to ſeven or eight: in March the green leaves appear, theſe are commonly four to a full grown root; they are folded over each other below, but ſpread open above ground, ſtanding croſs-ways: they are of a deep green, and when fully grown, are five or ſix inches long, and one and a half broad. The ſeed-veſſel comes out from between the leaves in April, and the ſeeds ripen in May, ſoon after which the leaves decay.

The other varieties of this, are ſuppoſed to have accidentally riſen from the ſeeds of this; ſo that thoſe who are deſirous to obtain a variety of theſe flowers, ſhould propagate them from ſeeds, by which method there may be a greater variety raiſed.

The ſecond ſort grows naturally on the mountains in Spain and Portugal. This hath a ſmaller root than the firſt, and a darker coat; the flowers appear in Auguſt or September; theſe are cut into ſix long narrow ſegments, of a reddiſh purple colour, having ſix yellow ſtamina. The leaves of this ſort come up ſoon after the flowers decay, and continue green all the winter, like the Saffron; theſe are long, narrow, and ſpread on the ground; in June theſe decay like the firſt ſort.

The third and fourth ſorts grow naturally in the Levant, but are commonly cultivated in the Engliſh gardens. Theſe flower at the ſame time as the firſt ſort, and the green leaves come up in the ſpring. The root of one of theſe ſpecies, is ſuppoſed to be the Hermodactyl of the ſhops.

Theſe are all very pretty varieties for a flower-garden, producing their flowers in autumn, when few other plants are in beauty; and are therefore, by ſome, called Naked Ladies. The green leaves come up in the ſpring, which are extended to a great length in May, then the green leaves begin to decay; ſoon after which time, is the proper ſeaſon to tranſplant their roots; for if they are ſuffered to remain in the ground till Auguſt, they will ſend forth freſh fibres; after which time it will be too late to remove them. The roots may be kept above ground until the beginning of Auguſt; at which time, if they are not planted, they will produce their flowers as they lie out of the ground, but this will greatly weaken their roots. The manner of planting their roots being the ſame as TULIPS, &c. I ſhall forbear mentioning it here, referring the reader to that article: and alſo for ſowing the ſeeds, by which means new varieties may be obtained, I ſhall refer to the article XIPHION; where will be proper directions for this work.

COLD ſignifies ſomething devoid of heat, or which does not contain in it any particles of fire; according to which definition, cold is a mere negative term. And this is agreeable to the ſentiments of moſt of our modern philoſophers, who ſuppoſe cold to conſiſt in a mere privation or diminution of heat.

Others much on the ſame principle, define cold, to be that ſtate of the minute parts of a body, wherein they are agitated more ſlowly and faintly than thoſe of the organs of feeling. And in this ſenſe, cold is a mere term of relation: and hence the ſame body becomes liable to be perceived hot or cold, as the particles of it are in greater or leſſer degree of motion than thoſe of the ſenſible organ.

Heat is ſuppoſed to conſiſt in a particular motion of the parts of the body; and hence the nature of cold, which is its oppoſite, is eaſily deducible; for we find that cold extinguiſhes, or rather abates heat. Whence it ſeems to follow, that thoſe bodies are cold, which check and reſtrain the motion of the particles, wherein heat conſiſts.

There are three kinds of bodies that can do this; viz. either thoſe whoſe particles are perfectly at reſt; or thoſe whoſe particles are indeed agitated, but with leſs violence than thoſe of the hot body to which they are applied; or, laſtly, ſuch whoſe particles have a motion proper for exciting the ſenſation of heat, but move with a different determination, ſo as to retard and change the motion of the particles of the organ.

Hence three different kinds of cold, or cold bodies, do proceed.

The 1ſt, That cold is common to all hard bodies; which conſiſts in the reſt of their parts.

The 2d is, That which riſes from plunging any part of the body in water; which conſiſts in this, that the parts of our præcordia, being more briſkly agitated than thoſe of the fluid, communicate part of their motion to it.

The 3d, The cold felt on the collection of warm air with a pan, or in blowing hot breath out of our mouth with the lips cloſe ſhut; which conſiſts in this, that the direct motion of the particles of air does, in ſome meaſure, change and rebate the motion and determination of the parts of the body: and hence it is, that a cold body cannot cool another without heating itſelf.

Hence alſo it proceeds, that the more the parts of a frigid body are at reſt, the more the particles of a warm body that is applied to heat them, muſt loſe of their motion, and conſequently of their heat.

Thus, there being more quieſcent parts in marble than in wood, which is full of pores and interſtices, the marble is felt colder than the wood: and hence alſo we may underſtand why air near marble, and other denſe bodies, feels ſomewhat colder than in other places.

On this principle the two latter kinds of cold appear ſomewhat more than privations: the particles inducing the cold may be eſteemed real frigorific corpuſcles; and coldneſs may be deemed a real quality, as well as hotneſs. Theſe particles do not only check the agitation of thoſe continually diffuſed from the inner parts of an animal to the outer; but having an elaſtic power, they bend, and hang about the filaments of the body, pinch and ſqueeze them; and hence is that acute pungent ſenſation called cold.

That cold is more than a mere relation or compariſon, is evident from its having real and poſitive effects; ſuch as freezing, congelation, condenſation, rarefaction, burſting, &c.

Dr. Clarke takes cold to be owing to certain nitrous and other ſaline particles, endued with particular figures proper to produce ſuch effects. Hence ſal-armoniac, ſalt petre, ſalt of urine, and many other volatile and alkalizate ſalts, mixed with water, increaſe its degree of cold very ſenſibly.

Hence alſo comes that popular obſervation, that cold prevents corruption; which, however, muſt not be admitted without an exception; ſince if an hard porous body have its interſtices filled with water, and this be too much dilated by freezing, the including body will be burſt. And thus it is that cold proves deſtructive to the parts of ſome plants: as it happened in the winters, anno 1728, and 1739-40, in ſeveral trees, whoſe trunks were much expoſed to the ſouth-weſt, the ſap being thereby rarefied by the warmth of the ſun, which, for ſeveral days, at the beginning of the ſevere froſt, ſhone with an uncommon heat, and the nights coming on to extreme cold, whereby the rarefied ſap was ſo ſuddenly condenſed, that the ſap-veſſels could not contain it, and thereby burſt off the bark of many trees almoſt from top to bottom; and this chiefly on the ſouth-weſt ſide of the trees; as it did of ſeveral large trees in the phyſic-garden at Chelſea; and ſeveral Pear, and other fruit-trees, in the nurſeries of Mr. Francis Hunt at Putney, &c. And thus it is that great quantities of trees are rendered ſhaken, and the timber, when cut, of little value; which is generally the caſe in very ſevere winters. In the hard froſt of the year 1739-40, there was great damage done to the Oak-timber in moſt parts of England, by the froſt penetrating to the ſap-veſſels of the trees; and by freezing the ſap, the veſſels could not contain it, but burſt with great noiſe; ſo that the woods reſounded with a noiſe ſomewhat like the breaking down of the branches of trees, when they are lopping.

Dr. Boerhaave ſays, That there is no ſuch thing in all nature as abſolute cold; that the moſt ſevere he had ever known, was in the year 1728, that then the water would freeze while it ran down his hand; and yet even then the cold was not ſo complete, but that he could make an artificial cold greater by twelve degrees.

Though much might be ſaid as to the effects of cold on plants, I ſhall only conclude with an obſervation of the Reverend Dr. Hales, who, in the concluſion of his excellent treatiſe of Vegetable Statics, ſays;

The conſiderable quantity of moiſture, which is perſpired from the branches of trees during the cold winter ſeaſon, plainly ſhews the reaſon why, in a long ſeaſon of cold north-eaſterly winds, the bloſſoms, and tender young-ſet fruit and leaves, are, in the early ſpring, ſo frequently blaſted, viz. by having the moiſture exhaled faſter than can be ſupplied from the trees; for, doubtleſs, moiſture riſes ſlower from the root, the colder the ſeaſon is, though it riſes, in ſome degree, all the winter; as is evident, as he ſays, from his ſixteenth experiment in the ſaid book.

And from the ſame cauſe it is, that the leafy ſpires of Corn are by theſe cold drying winds often faded, and turned yellow; which makes the huſbandman, on theſe occaſions, wiſh for ſnow: which, though it be very cold, yet it not only defends the root from being frozen, but alſo ſcreens the Corn from theſe drying winds, and keeps it in a moiſt, florid, ſupple ſtate.

It ſeems therefore to be a reaſonable direction, which ſome authors, who write on agriculture and gardening give, viz. During theſe cold drying winds, when little dew falls, to water the trees in dry ſoils, in the bloſſoming ſeaſon, and while the young-ſet fruit is tender; and provided there is no immediate danger of a froſt, or in caſe of continued froſt, to take care to cover the trees well, and at the ſame time to ſprinkle them with water; which is imitating nature's method of watering every part.

As to ſloping ſhelters over wall-trees he ſays; I have often found, that when they are ſo broad, as to prevent any rain or dew coming at the trees, they do more harm than good in theſe long eaſterly drying winds, becauſe they prevent the rain and dews falling on them; which would not only refreſh and ſupple them, but alſo nouriſh them: but in caſe of ſharp froſt after a ſhower of rain, theſe ſhelters and other fences muſt needs be of excellent uſe to prevent the almoſt total deſtruction occaſioned by the freezing of the tender parts of vegetables, when they are ſaturated with moiſture.

COLDENIA. Lin. Gen. Plant. 159. This plant was ſo titled by Dr. Linnæus, in honour of Dr. Colden, of North America, who is a very curious botaniſt, and has diſcovered ſeveral new plants which were not known before.

The CHARACTERS are,

The empalement of the flower is compoſed of four erect leaves, which are as long as the petal. It hath a funnel-ſhaped flower of one petal, ſpreading at the top, and obtuſe; it hath four ſtamina, which are inſerted in the tube of the petal, terminated by roundiſh ſummits. In the center is ſituated four oval germen, each ſupporting a hairy ſtyle the length of the ſtamina, crowned by permanent ſtigmas. The germen afterward become an oval, compreſſed, rough fruit, with four cells, terminated by four beaks, incloſed by the empalement, each of the cells containing a ſingle ſeed, convex on one ſide, and angular on the other.

This genus of plants is ranged in the third ſection of Linnæus's fourth claſs, intitled Tetrandria Tetragynia, the flower having four ſtamina and four ſtyles.

There is but one SPECIES of this genus, viz.

COLDENIA (*Procumbens*). Flor. Zeyl. 79. This is by Dr. Pluknet titled, Teucrii facie biſnagarica tetracoccos roſtrata. Alm. 363.

This is a native of India, from whence the ſeeds have been brought to ſome of the curious botanic gardens. It was ſent me by Dr. Linnæus, profeſſor of botany at Upſal in Sweden. It is an annual plant, whoſe branches trail on the ground; they extend near a foot from the root, and divide into many ſmaller branches, garniſhed with ſhort leaves, ſitting cloſe to them; theſe are deeply crenated on their edges, and have ſeveral longitudinal veins; they are of a glaucous colour, and come out without order. The flowers are produced at the wings of the leaves, growing in ſmall cluſters; theſe have one funnel-ſhaped petal cut into four ſegments at the top; they are of a pale blue colour, and very ſmall; they have four ſtamina and four ſtyles, having hairy ſtigmas. When the flower decays, the germen becomes a fruit, compoſed of four cells, wrapped up in the empalement, each containing a ſingle ſeed.

This plant is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each put into a ſeparate ſmall pot, plunged into a hot-bed of tanners bark, obſerving to ſhade them till they have taken freſh root; after which they ſhould have air admitted to them every day in proportion to the warmth of the ſeaſon, and gently watered two or three times a week in warm weather, but they muſt not have too much moiſture. Theſe plants muſt remain in the hot-bed, where they will flower in June, and the ſeeds will ripen in September.

COLEWORTS. See BRASSICA.

COLLINSONIA. Lin. Gen. Plant. 38. The title of this plant was given to it by Dr. Linnæus, in honour of Mr. Peter Collinſon, F. R. S. a moſt diſtinguiſhed promoter of botanical ſtudies, and the firſt who introduced this plant, among many others, to the Engliſh gardens.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five equal ſegments at the top, the three upper being reflected, and the two under erect. The flower is funnel-ſhaped, of one petal which is unequal, and much longer than the empalement, cut into five parts at the top, the upper being ſhort and obtuſe, two of them being reflexed; the lower lip or beard is longer, ending in many points. It hath two long briſtly ſtamina which are erect, terminated by incumbent ſummits. It hath a quadrifid obtuſe germen, with a large gland, ſupporting a briſtly ſtyle the length of the ſtamina, crowned by a pointed bifid ſtigma. The germen afterward becomes a ſingle roundiſh ſeed, ſituated in the bottom of the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's ſecond claſs, intitled Diandria Monogynia, the flower having two ſtamina and one ſtyle.

We have but one SPECIES of this plant, viz.

COLLINSONIA (*Canadenſis*) foliis cordatis oppoſitis. *Collinſonia with heart-ſhaped leaves growing oppoſite.*

This plant was brought from Maryland, where it grows wild, as it alſo does in many other parts of North America, by the ſides of ditches, and in low moiſt ground, where it uſually riſes to the height of four or five feet; but in England it ſeldom grows above three feet high, and unleſs it be planted in a moiſt warm ſituation, or in dry weather is duly watered, it rarely flowers well; therefore many people keep the plants in large pots, for the more convenient watering them, but theſe plants ſeldom produce good ſeeds; whereas thoſe which are planted in the full ground, and are conſtantly watered, will ripen ſeeds very well in good ſeaſons.

This hath a perennial root. The ſtalks decay in the autumn, and freſh ſhoots come out in the ſpring. The ſtalks are ſquare, garniſhed with heart-ſhaped leaves, placed oppoſite, which are ſawed on their edges. The flowers are produced at the extremity of the ſtalks in looſe ſpikes; theſe have long tubes, and are divided into five parts at the top; they are of a purpliſh yellow, and the lower ſegment is terminated by long hairs. The flowers appear in July, and the ſeeds ripen in autumn.

This plant may be eaſily propagated by parting the roots in October. Theſe roots ſhould be planted at three feet diſtance, for they require much nouriſhment, otherwiſe they will not thrive. This plant will live in the open ground, if it is planted in a ſheltered ſituation.

COLOCASIA. See ARUM.

COLOCYNTHIS. See CUCURBITA.

COLUMBINE. See AQUILEGIA.

COLUMNEA. Plum. Nov. Gen. 28. tab. 33. Lin. Gen. Plant. 710. The title of this genus was given to it by Plumier, in honour of Fabius Columna, a nobleman of Rome, who has publiſhed two curious books of botany.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five parts at the top; it hath one petal, of the (ringent) or grinning kind, having a long ſwelling tube, divided above into two lips, the upper being erect, concave, and entire; the lower is divided into three parts which ſpread open: it hath four ſtamina, two being longer than the other; theſe are incloſed in the upper lip, and are terminated by ſingle ſummits. In the center is ſituated the roundiſh germen, ſupporting a ſlender ſtyle, crowned by a bifid acute ſtigma. The germen afterward becomes a globular berry with two cells, ſitting on the empalement, and is of the ſame magnitude, containing ſeveral oblong ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia. The flowers of this claſs have two long and two ſhort ſtamina, and thoſe of this ſection have their ſeeds incloſed in a capſule.

We have but one SPECIES of this plant in the Engliſh gardens, viz.

COLUMNEA (*Scandens*). Lin. Sp. Plant. 638. Columnea ſcandens, Phœniceo flore, fructu albo. Plum. Nov. Gen. 28. *Climbing Columnea with a ſcarlet flower and a white fruit.* Plumier mentions a variety of this, with a yellowiſh flower and a white fruit. But this is only a ſeminal variation ſuppoſed to have accidentally riſen from the ſeeds of the firſt.

I received ſeeds of the ſcarlet ſort from Carthagena in New Spain, where the plants grew naturally. This hath a climbing ſtalk, which faſtens itſelf to the neighbouring plants, whereby it is ſupported. The leaves are oval, ſawed on their edges, and ſtand upon ſhort foot-ſtalks; theſe, and alſo the ſtalks, are very hairy; but the plants decayed the following year, before they produced any flowers, ſo that I can give no deſcription of them.

Theſe plants are natives of the warmeſt parts of America, ſo are too tender to live in England, unleſs they are preſerved in the ſtove; they are propagated by

by ſeeds, which muſt be ſown in a good hot-bed; and when the plants come up, they muſt be treated in the ſame way as other tender exotic plants which are kept in the bark-ſtove.

COLUTEA. Tourn. Inſt. R. H. 649. tab. 417. Lin. Gen. Plant. 776. Bladder Sena.

The CHARACTERS are,

It hath a bell-ſhaped permanent empalement of one leaf, indented in five parts. The flower is of the butterfly kind. The ſtandard, wings, and keel, vary in their figure in different ſpecies. It hath ten ſtamina, nine of which are joined, the other ſtands ſeparate, which are terminated by ſingle ſummits. In the center is ſituated an oblong germen, which is compreſſed, ſupporting a riſing ſtyle, crowned by a bearded line, extended from the middle of the upper part of the ſtyle. The germen afterward becomes a broad ſwollen pod with one cell, including ſeveral kidney-ſhaped ſeeds.

This genus of plants is ranged in Linnæus's third ſection of his ſeventeenth claſs, intitled Diadelphia Decandria. The flowers of this claſs have ten ſtamina, nine of which are joined, and the tenth ſtands ſeparate.

The SPECIES are,

1. COLUTEA (*Arboreſcens*) arborea, foliolis obcordatis. Hort. Cliff. 365. *Tree Bladder Sena with heart-ſhaped lobes.* Colutea veſicaria. C. B. P. 396. *Common Bladder Sena.*
2. COLUTEA (*Iſtria*) foliolis ovatis, integerrimis, caule fruticoſo. *Shrubby Bladder Sena with oval leaves which are entire.*
3. COLUTEA (*Orientalis*) foliolis cordatis minoribus, caule fruticoſo. *Bladder Sena with ſmaller heart-ſhaped leaves, and a ſhrubby ſtalk.* Colutea Orientalis flore ſanguineâ coloris, luteâ maculâ notato. Tourn. Cor. 44.
4. COLUTEA (*Fruteſcens*) fruticoſa foliolis ovato-oblongis. Hort. Cliff. 366. *Shrubby Bladder Sena with oblong oval leaves.* Colutea Æthiopica flore Phœniceo, folio Barbæ Jovis. Breyn. Cent. 1. 73. *Æthiopian Bladder Sena with a ſcarlet flower.*
5. COLUTEA (*Americana*) foliolis ovatis, emarginatis, leguminibus oblongis compreſſis acuminatis, caule arboreo. *Bladder Sena with oval leaves indented at the top, oblong, compreſſed, pointed pods, and a tree-like ſtalk.* Colutea Americana, veſiculis oblongis compreſſis. Houſt. MSS. *American Bladder Sena with oblong compreſſed pods.* Dr. Pluknet titles it Colutea Veræ Crucis veſicaria. Alm. 111. pl. 165. f. 3. *Bladder Sena of Vera Cruz.*
6. COLUTEA (*Herbacea*) herbacea foliolis linearibus. Hort. Upſal. 266. *Herbaceous Bladder Sena with narrow leaves.* Colutea Africana annua, foliolis parvis, mucronatis, veſiculis compreſſis. Hort. Amſt. 2. p. 87. tab. 44.
7. COLUTEA (*Procumbens*) caulibus procumbentibus, foliolis ovato-linearibus, tomentoſis, floribus alaribus pedunculis longiſſimis. *Bladder Sena with trailing ſtalks, oval narrow leaves which are woolly, and flowers growing from the ſides of the ſtalks, with very long foot-ſtalks.*

The firſt ſort is commonly cultivated in the nurſery-gardens, as a flowering ſhrub, to adorn plantations. This grows naturally in Auſtria, in the ſouth of France and Italy, from whence the ſeeds were originally brought to England; this hath ſeveral woody ſtems, which grow to the height of twelve or fourteen feet, ſending out many woody branches, garniſhed with winged leaves, compoſed of four or five pair of oval lobes, placed oppoſite, terminated by an odd one; theſe are indented at the top in form of a heart, and are of a grayiſh colour. The flowers come out from the wings of the leaves upon ſlender foot-ſtalks, about two inches long, each ſuſtaining two or three flowers of the butterfly kind, whoſe ſtandard is reflexed and large. The flowers are yellow, with a dark-coloured mark on the petal; theſe are ſucceeded by inflated pods an inch and a half long, having a ſeam on the upper ſide, containing a ſingle row of kidney-ſhaped ſeeds, faſtened to a placenta. This flowers in June and July, and the ſeeds ripen in autumn. There is a variety of this with reddiſh pods, which is equally common in the gardens, and is ſuppoſed to be only an accidental variety, for the plants do not differ in any other part.

The ſeeds of the ſecond ſort were brought from the Levant by the Reverend Dr. Pocock, which ſucceeded in the garden at Chelſea; and ſince Dr. Ruſſel, who reſided many years at Aleppo, brought over dried ſamples of this ſort, which he aſſures me grow common near that city. This ſort ſeldom grows more than ſix or ſeven feet high; the branches are very ſlender, and ſpread out on every ſide, garniſhed with winged leaves, compoſed of nine pair of ſmall, oval, entire lobes, terminated by an odd one; the flowers ſtand upon ſlender foot-ſtalks, about the ſame length of the former. The flowers are alſo like thoſe, but are of a brighter yellow. This ſort begins to flower early in May, and continues flowering till the middle of October.

The third ſort was diſcovered by Dr. Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris, where they ſucceeded, and ſince have been communicated to moſt of the curious gardens in Europe. This hath a woody ſtem, which ſends out many branches on every ſide, which do not riſe above ſeven or eight feet high; theſe are not ſo ſtrong as thoſe of the firſt ſort, and are garniſhed with winged leaves, compoſed of five or ſix pair of ſmall heart-ſhaped lobes, terminated by an odd one. The flowers proceed from the ſide of the branches, ſtanding upon foot-ſtalks, each ſuſtaining two or three flowers, ſhaped like thoſe of the firſt ſort, but ſmaller; they are of a dark red colour, marked with yellow: theſe appear in June, and the ſeeds ripen in autumn.

The fourth ſort grows naturally in Æthiopia, from whence the ſeeds were brought to Europe. This hath a weak ſhrubby ſtalk, which ſends out ſide branches, growing erect, garniſhed with equal winged leaves, compoſed of ten or twelve pair of ſmall, oval, oblong, hoary lobes. The flowers are produced at the upper part of the branches from the wings of the leaves, each foot-ſtalk ſuſtaining three or four ſcarlet flowers, which are longer than thoſe of the other ſorts, and are not reflexed; theſe are ſucceeded by inflated pods, containing one row of kidney-ſhaped ſeeds. The uſual time of this plant producing its flowers is in June; but when the ſeeds are ſown early in the ſpring, the plants frequently flower the following autumn.

The fifth ſort was ſent me from La Vera Cruz, in New Spain, in the year 1730, by the late Dr. Houſtoun. This hath a ſhrubby ſtalk, which riſes to the height of twelve or fourteen feet, ſending out many branches, garniſhed with winged leaves, compoſed of three pair of oval lobes, terminated by an odd one; theſe are indented at the top, and are of a light green. The flowers are of a bright yellow, and ſtand two or three upon each foot-ſtalk, and are ſucceeded by compreſſed winged pods near four inches long, which end in long points.

The ſixth ſort grows naturally at the Cape of Good Hope. This is an annual plant of little beauty, ſo is rarely cultivated but in botanic gardens for the ſake of variety. It riſes with a ſlender herbaceous ſtalk about a foot and a half high, dividing upward into three or four branches, garniſhed with winged leaves, compoſed of five or ſix pair of very narrow lobes an inch long, which are a little hoary. The flowers are ſmall, of a purpliſh colour, ſtanding three together on ſlender foot-ſtalks, which are ſucceeded by flat oval pods, each containing two or three kidney-ſhaped ſeeds. It flowers in July, and the ſeeds ripen in autumn, and the plant decays ſoon after.

The ſeeds of the ſeventh ſort were ſent me from the Cape of Good Hope, in 1753, which have ſucceeded in the garden at Chelſea. This plant hath many ſlender ligneous ſtalks, which trail on the ground, and

are divided into many ſmaller branches, garniſhed with winged leaves, compoſed of twelve or fourteen pair of ſmall, narrow, oval lobes, terminated by an odd one; theſe, and alſo the ſtalks, are covered with a whitiſh down. The flowers are very ſmall, of a purple colour, and ſtand upon very long ſlender foot-ſtalks, each ſuſtaining three or four flowers; theſe are ſucceeded by compreſſed pods little more than half an inch long, which are a little bent like a ſickle, each containing a ſingle row of ſmall kidney-ſhaped ſeeds. It flowers in June and July, and the ſeeds ripen in autumn. This is a perennial plant, which, if ſheltered in the winter, will continue ſeveral years; but the branches do not extend more than a foot in length, and unleſs they are ſupported, always trail upon the ground.

The three firſt mentioned ſorts are very hardy ſhrubs, which thrive in the open air extremely well, ſo are generally propagated for ſale in the nurſery-gardens; but the firſt ſort hath been longer in England, ſo is more generally known and propagated than either of the other, which have been but few years in the Engliſh gardens, nor has the third ſort been long known in this country. This is not mentioned in any of the botanic books; but as the ſeeds ripen here very well, in a few years it may be in as great plenty as the firſt ſort.

The three firſt ſorts are propagated by ſowing their ſeeds any time in the ſpring, in a bed of common earth; and when the plants are come up, they muſt be kept clear from weeds; and the Michaelmas following they ſhould be tranſplanted either into nurſery rows, or in the places where they are deſigned to remain; for if they are let grow in the ſeed-bed too long, they are very ſubject to have downright tap-roots, which renders them unfit for tranſplantation; nor ſhould theſe trees be ſuffered to remain too long in the nurſery before they are tranſplanted, where they are to remain for the ſame reaſon.

The firſt ſort will grow to the height of twelve or fifteen feet, ſo is very proper to intermix with trees of a middling growth in wilderneſs quarters; or in clumps of flowering trees, where the oddneſs of their flowers and pods will make a pretty variety, eſpecially as theſe trees continue a long time in flower; for they uſually begin flowering by the end of May, and from that time to September they are ſeldom deſtitute of flowers, but eſpecially the ſecond ſort.

Theſe ſhrubs make great ſhoots annually, which are frequently broken down by ſtrong winds in the ſummer; ſo that if they are not ſheltered by other trees, their branches ſhould be ſupported, otherwiſe they will be broken and ſplit off, whereby the trees will be rendered unſightly.

The third ſort does not grow ſo tall as the common, but makes a more regular ſhrub and is leſs liable to ſplit. The flowers of this ſort are of a duſky red colour, ſpotted with yellow, ſo it makes a very pretty variety, and is as hardy as the common ſort, therefore may be propagated by ſeeds in the ſame manner.

The fourth ſort is tender, ſo will not live through the winters (when they are ſevere) in the open air in England; but in mild winters, if they are planted in a dry ſoil and a warm ſituation, they will thrive very well; and thoſe plants which live abroad will flower much ſtronger, and make a finer appearance, than thoſe which are preſerved in the green-houſe; for theſe plants require a large ſhare of air, otherwiſe they are apt to draw up weak, ſo ſeldom produce their flowers in plenty; therefore when any of the plants are ſheltered in winter, they muſt be placed as near the window as poſſible, that they may have all the advantages of air; and in the ſpring they muſt be hardened, to bear the open air as ſoon as poſſible.

This ſort is propagated by ſeeds as the former. If the ſeeds are ſown early in the ſpring upon a warm border of light earth, the plants will flower in Auguſt; and, if the autumn proves favourable, they will ſometimes ripen their ſeeds very well; but there are ſome perſons who ſow the ſeeds upon a moderate hot-bed in the ſpring, whereby they bring their plants ſo forward as to flower in July, whereby the ſeeds are generally perfected from theſe plants. When the plants are tranſplanted, it ſhould always be done while they are young, for they do not bear removing when they are large. This ſort will ſometimes live in the open air for three or four years, when they ſtand in a well ſheltered ſituation; and theſe will grow to have large heads, and make a very fine appearance when they are in flower; they will alſo continue much longer in beauty than thoſe plants which are treated more tenderly.

The fifth ſort grows naturally in warm countries, ſo is too tender to thrive in the open air in England. It is propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring; and when the plants are two inches high, they ſhould be each tranſplanted into a ſeparate ſmall pot filled with light earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them till they have taken freſh root; after which they muſt be treated in the ſame way as other plants from the ſame climate, always keeping them in a ſtove, which ſhould be of a moderate temperature of heat.

The ſixth ſort is a low annual plant, which ſeldom grows more than a foot and a half in height; the flowers being ſmall, and having little beauty, it is ſeldom preſerved but in botanic gardens. The ſeeds of this ſort muſt be ſown upon a moderate hot-bed in the ſpring, and the plants muſt be planted into ſmall pots, and brought forward in another hot-bed. In July they will flower, when they may be expoſed in the open air, in a warm ſituation, where the ſeeds will ripen in September, and the plants will ſoon after decay.

The ſeventh ſort may be raiſed on a moderate hot-bed in the ſpring, and afterward expoſed to the open air in ſummer; but in winter they muſt be ſheltered under a frame, otherwiſe the froſt will deſtroy them.

COLLIFLOWER. See BRASSICA.

COLUTEA SCORPIOIDES. See EMERUS.

COMA AUREA. See CHRYSOCOMA.

COMARUM. Lin. Gen. Plant. 563. Pentaphylloides. Tourn. Inſt. R. H. 298. Marſh Cinquefoil.

The CHARACTERS are,

The flower hath a large ſpreading empalement of one leaf, divided into ten parts at the top, which is coloured. It hath five oblong petals, which are inſerted in the empalement, but are much ſmaller. It hath twenty or more permanent ſtamina, which are inſerted into the empalement, terminated by moon-ſhaped ſummits. It hath a great number of ſmall roundiſh germen collected into a head, having ſhort ſingle ſtyles ariſing from their ſides, which are crowned by ſingle ſtigmas. The common receptacle afterward becomes a large fleſhy fruit, having many pointed ſeeds adhering to it.

This genus of plants is ranged in the fifth ſection of Linnæus's twelfth claſs, intitled Icoſandria Polygynia, the flower having many ſtamina and a great number of ſtyles.

We know but one SPECIES of this genus, viz.

COMARUM (*Paluſtre*). Fl. Lapp. 214. Pentaphylloides paluſtre rubrum. Inſt. R. H. 298. *Red Marſh Baſtard Cinquefoil*; and the Quinquefolium paluſtre rubrum. C. B. P. 326. *Red Marſh Cinquefoil.*

There is another variety of this, which grows plentifully in Ireland, and alſo in ſeveral places in the north of England, from whence I have procured many of the plants, which after one year's growth in the garden, have been ſo like the common ſort, as not to be diſtinguiſhed from it; ſo that the different appearance which it has in the places where it grows noturally, may be ſuppoſed to ariſe from the ſoil and ſituation. This is by Dr. Plukenet titled Pentaphyllum paluſtre rubrum, craſſis & villoſis foliis Suecicum & Hibernicum. Alm. 284. *Red Marſh Cinquefoil of Sweden and Ireland, with thick and hairy leaves.*

This plant hath creeping woody roots, which ſend out many black fibres, penetrating deep into the ground, from which ariſe many herbaceous ſtalks about

two feet high, which generally incline to the ground; theſe are garniſhed at each joint with one winged leaf, compoſed of five, ſix, or ſeven lobes, which riſe above each other, the middle being the largeſt; the lower diminiſhing, and with their baſe embrace the ſtalks; theſe are deeply ſawed on their edges, ſmooth above, of a light green, and hoary on their under ſide. The flowers are produced at the top of the ſtalks, three or four together on ſhort foot-ſtalks; theſe have a large ſpreading empalement, which is red on the upper ſide, and divided at the top into ten parts; in the center ſits the five petals, which are red, and not more than a third part the ſize of the empalement; within theſe are ſituated many germen, attended by twenty or more ſtamina, terminated by dark ſummits. After the flower is paſt, the receptacle which ſits in the bottom of the empalement, becomes a fleſhy fruit, ſomewhat like a Strawberry, but flatter, including a great number of pointed ſeeds. It flowers in July, and the ſeeds ripen in autumn.

As theſe plants are natives of bogs, they are with difficulty preſerved in gardens, for they muſt be planted in a ſoil as near to that of their natural growth as poſſible; they are very apt to ſpread much at the root, when in a proper ſituation: ſo whoever is inclinable to preſerve theſe plants, may remove them from the places of their growth in October; and if they are planted on a bog, there will be no danger of the plants ſucceeding. There are a few of theſe plants now growing upon a bog at Hampſtead, which were planted there ſome years ago; but the neareſt place to London, where they grow wild in plenty, is in the meadows near Guilford in Surry.

COMMELINA. Lin. Gen. Plant. 58. Plum. Nov. Gen. 48. tab. 38. Zanonia. Plum. Nov. Gen. 38. tab. 38. This plant was ſo called by father Plumier, from Dr. Commeline, a famous profeſſor of botany at Amſterdam.

The CHARACTERS are,

It hath a permanent ſpatha, which is large, heart-ſhaped, compreſſed, and ſhut together. The flower hath ſix concave petals, three or four of which are ſmall and oval, (theſe are frequently taken for the empalement) the other are large, roundiſh, and coloured. It hath three nectariums, (which have been ſuppoſed to be ſtamina;) theſe have proper ſtamina, which ſit horizontal, and are ſhaped like a croſs. There are three awl-ſhaped ſtamina, which recline, and ſit about thoſe of the nectarium, which are terminated by oval ſummits. In the center is ſituated a roundiſh germen, ſupporting a twining ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes a naked globular capſule, with three furrows, having three cells, each containing two angular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's third claſs, intitled Triandria Monogynia, the flower having three ſtamina and one ſtyle; to this genus he has joined the Zanonia of Plumier, which was ſeparated by that author from Commelina, becauſe the flower has three petals, and his Commelina but two; whereas the ſeveral ſpecies of this genus moſt of them differ in the number of their petals, ſome having two green, and four coloured petals, others are equal, and ſome have four green, and but two coloured petals.

The SPECIES are,

1. COMMELINA (*Communis*) corollis inæqualibus, foliis ovato-lanceolatis, acutis, caule procumbente, glabro. Hort. Upſal. 18. *Commelina with unequal petals, oval, ſpear-ſhaped, pointed leaves, and a ſmooth trailing ſtalk.* Commelina procumbens annua, ſaponariæ folio. Hort. Elth. 93. tab. 78.
2. COMMELINA (*Erecta*) corollis inæqualibus, foliis ovato-lanceolatis, caule erecto, ſcabro, ſimpliciſſimo. Hort. Upſal. 18. *Commelina with unequal petals, oval ſpear-ſhaped leaves, and a ſingle, upright, rough ſtalk.* Commelina erecta, ampliore ſubcæruleo flore. Hort. Elth. 94. tab. 78.
3. COMMELINA (*Africana*) corollis inæqualibus, foliis lanceolatis, glabris, obtuſis, caule repente. Lin. Sp. Plant. 41. *Commelina with unequal petals, ſmooth, ſpear-ſhaped, obtuſe leaves, and a creeping ſtalk.* Commelina procumbens, flore luteo. Prod. Leyd. 538.
4. COMMELINA (*Tuberoſa*) corollis æqualibus foliis ovato-lanceolatis, ſubcilliatis. Hort. Upſal. 18. *Commelina with equal petals, and oval ſpear-ſhaped leaves, which are hairy on their under ſide.* Commelina radice anacampſerotidis. Hort. Elth. 94. tab. 79.
5. COMMELINA (*Zanonia*) corollis æqualibus, pedunculis incraſſatis, foliis lanceolatis, vaginis laxis margine hirſutis bracteis geminis. Lin. Sp. Plant. 61. *Commelina with equal petals, thick foot-ſtalks to the flower, ſpear-ſhaped leaves, a looſe hood, and double bractea.* Zanonia graminea perfoliata. Plum. Nov. Gen. 38.

There are ſome other ſpecies of this genus, but thoſe which are here enumerated, are all that I have ſeen growing in the Engliſh gardens.

The firſt ſort grows naturally in the iſlands in the Weſt-Indies, and alſo in Africa; this is an annual plant, which hath ſeveral trailing ſtalks, that put out roots at the joints, which ſtrike into the ground; at each joint is placed one oval ſpear-ſhaped leaf, ending in a point, embracing the ſtalk with its baſe, and hath ſeveral longitudinal veins: they are of a deep green, and ſmooth. The flowers come out from the boſom of the leaves, included in a ſpatha, which is compreſſed and ſhut up, each having two or three flowers, ſtanding upon ſhort foot-ſtalks, compoſed of two large blue petals, and four ſmall green ones, which have generally been termed the empalement of the flower; within theſe are ſituated three nectariums, each having a ſlender ſtamina fixed on the ſide; theſe ſurround the germen, which afterward becomes a roundiſh capſule having three cells, in each of theſe is lodged two angular ſeeds. It flowers in June and July, and the ſeeds ripen in autumn. This plant was titled Ephemeron flore dipetalo, by ſome of the older writers on botany.

The ſecond ſort grows naturally in Penſylvania, from whence I received the ſeed; this hath a perennial root, compoſed of many white fibres; the ſtalks riſe a foot and a half high, are upright, rough, herbaceous, and about the ſize of quills; theſe have a ſingle leaf at each joint, ſhaped like thoſe of the firſt ſort, and embrace the ſtalks with their baſe; the flowers come out from the boſom of the leaves at the upper part of the ſtalk, ſitting upon ſhort foot-ſtalks; they are of a pale bluiſh colour, and are ſucceeded by ſeeds as the firſt ſort. This flowers about the ſame time with the firſt, but the ſeeds do not often ripen in England.

The third ſort grows naturally in Africa; this hath a fibrous root, which ſends out many trailing ſtalks three feet long, which ſend out roots at every joint, and from them many more ſhoots are produced; ſo that where the plants are in a proper degree of warmth, and have room to ſpread, they will cover a large ſurface of ground. The leaves of this ſort are very like thoſe of the firſt, but the flowers are larger and of a deep yellow colour; the petals of this are heart-ſhaped, and the ſeed-veſſels are larger. This flowers in July, and the ſeeds ripen in autumn.

The fourth ſort grows naturally near Old Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun. This hath a thick fleſhy root compoſed of ſeveral tubers, ſomewhat like thoſe of Ranunculus, ſeveral joining together at the top, where they form a head, and diminiſh gradually downward; from this ariſe one or two inclining ſtalks, which ſend out ſide branches from their lower parts; theſe are garniſhed with oval ſpear-ſhaped leaves, part of which have long foot-ſtalks, the others embrace the ſtalks with their baſe; they have ſhort hairs on their under ſide, and toward the ſtalk, but are ſmooth above, of a deep green colour, and cloſe every evening, or in cold weather. The flowers are produced toward the upper part of the ſtalks, from the boſom of the leaves, ſtanding upon ſlender foot-ſtalks; theſe are compoſed of three blue petals which are

pretty

pretty large and roundiſh, and three ſmaller which are green; the ſeeds are like thoſe of the other ſorts. It flowers in June, July, and Auguſt, and the ſeeds ripen in autumn, ſoon after which the ſtalks decay, but the roots may be preſerved two or three years, if they are planted in a ſtove in winter.

The fifth ſort grows naturally in the Weſt-Indies; the ſeeds of this were ſent me from the iſland of Barbuda. This hath trailing ſtalks like the firſt, which are garniſhed with narrow graſſy leaves, embracing the ſtalks with their baſe; the flowers are produced at the end of the ſtalks, upon thick foot-ſtalks, three flowers generally ſitting on each. The flowers have three equal large petals of a ſky blue, and three ſmaller which are green. Theſe flower in July and Auguſt, but have not perfected ſeeds in England.

All the ſorts are propagated by ſeeds; the firſt will grow if ſown in the full ground; but if the ſeeds are ſown upon a warm border of light earth in autumn, the plants will riſe early in the ſpring; ſo from theſe goods ſeeds may be expected, if the ſeaſon proves favourable; whereas thoſe which are ſown in the ſpring, often lie long in the ground, ſo rarely ripen their ſeed. Theſe plants have but little beauty, ſo that two or three of each ſort, is as many as moſt people chooſe to have; therefore if the ſeeds are ſown in autumn where the plants are deſigned to remain, or the ſeeds permitted to ſcatter, the plants will require no farther care, but to keep them clear from weeds.

The ſecond ſort hath a perennial root; this ſeldom ripens ſeeds in England, but the roots ſend out offſets, by which the plant is eaſily propagated. But it is too tender to live in the full ground in winter, unleſs it has a warm ſheltered ſituation; therefore ſhould be planted in pots, and ſheltered under a common frame in winter, and expoſed abroad in ſummer; the beſt time to tranſplant and part theſe roots is about the end of March.

The other ſorts are tender, ſo their ſeeds muſt be ſown on a moderate hot-bed in the ſpring, and when the plants are two inches high, they ſhould be tranſplanted to a freſh hot-bed to bring the plants forward; when they have taken freſh root, they ſhould have a large ſhare of freſh air admitted to them every day in warm weather, to prevent their growing weak; and in June theſe may be carefully taken up, and tranſplanted on a warm border of light earth, obſerving to ſhade them till they have taken freſh root; after which they will require no other care, but to keep them clean from weeds. With this management the plants will flower and produce good ſeeds.

The third and fourth ſorts may be continued, if they are planted in pots, and in autumn placed in the bark-ſtove; or if the roots of the fourth ſort are taken out of the ground in autumn, and kept in a warm place in winter, they may be planted again in the ſpring, placing them on a hot-bed to forward their ſhooting, and theſe will produce ſtronger plants than thoſe which riſe from ſeeds.

COMMONS and COMMON-FIELDS. See LAND.

COMPARTMENTS are beds, plats, borders, and walks, laid out according to the form of the ground, and ingenuity of the artiſt, and depend more on a good fancy than any rules. Theſe are diverſified in knots, flower-gardens, or parterres, of which there are great variety, and may be diverſified infinitely, according to the fancy of the deſigners.

Plain compartments are pieces of ground divided into equal ſquares and flower-beds, marked out by the line, of equal length and breadth.

Some perſons allow to theſe ſquares, borders of two feet in breadth, and not more, if the plat of ground be ſmall; but if they be reaſonably large, three feet; and they edge the borders with Box, or upright hardy Thyme, or ſome other aromatic herbs or flowers, for the ſake of the greater neatneſs.

And in order to preſerve the paths and alleys of compartments firm, even, and durable, they lay them with a coat of ſand or gravel, two or three inches thick, keeping them hoed and weeded as often as there ſhould be occaſion.

Theſe compartments were much eſteemed by the French, whoſe gardens were all laid out into ſeveral compartments, ſalons, boſquets, &c. after the manner of architects in buildings; but theſe ſtiff, unnatural gardens are now juſtly exploded, and a much better taſte has of late prevailed in the Engliſh gardens.

COMPOSTS are ſo called of compoſta, or compoſita, *Lat.* compounds, or componere, *Lat.* to compound or mix: and in huſbandry and gardening they ſignify ſeveral ſorts of ſoils or earthy matter mixed together, in order to make a manure for aſſiſting the natural earth in the work of vegetation, by way of amendment or improvement.

Compoſts are various, and ought to be different, according to the different nature or quality of the ſoils which they are deſigned to meliorate: and according as the land is either light, ſandy, looſe, heavy, clayey, or cloddy. A light looſe land requires a compoſt of a heavy nature, as the ſcouring of deep ditches, ponds, &c.

So on the other hand, a land that is heavy, clayey, or cloddy, requires a compoſt of a more ſprightly and fiery nature, that will inſinuate itſelf into the lumpiſh clods; which if they were not thus managed, would very much obſtruct the work of vegetation.

The great uſe of compoſts is for ſuch plants as are preſerved in pots or tubs; or in ſmall beds or borders of flower-gardens; which is what I ſhall here mention, and ſhall treat of thoſe compoſts or dreſſings, which are uſed in gardens and fields, under the articles of DUNG and MANURE.

As ſome plants delight in a rich light ſoil, others in a poor ſandy ſoil, and ſome in a loamy ſoil; ſo there ſhould be different compoſts prepared, in all thoſe gardens, where a great variety of plants are cultivated: and this is much more neceſſary in countries at a great diſtance from London, than in the neighbourhood of it, becauſe there is ſo great variety of lands, within ten miles round London, which have been ſo long dreſſed and cultivated, that a ſupply of earth fit for all ſorts of plants, may be eaſily procured; but in ſome places which are at a diſtance from large towns, it is very difficult to procure a quantity of earth proper for the choicer ſorts of flowers and plants; therefore the compoſts will require more care, and ſhould be mixed a conſiderable time longer before they are uſed; that they may have the advantage of heat and cold, to meliorate and improve them; and ſhould be frequently turned over, that the parts may be well mixed and incorporated, and the clods well broken and divided.

Almoſt every one who hath written on this ſubject, hath directed the procuring of the upper ſurface of earth from a paſture ground, as one of the principal ingredients, in moſt compoſts for plants, which is certainly a very good one, provided it has time to meliorate before it is uſed; for if this is mixed up haſtily, and put into pots or tubs, before it has had a winter's froſt, and ſummer's heat, to looſen the parts effectually; it will unite and cake together, ſo hard, as to ſtarve the plants that are put into it. For all earth when put into pots or tubs, is much more apt to bind, than when it is in beds; therefore ſhould be in proportion made looſer, according to the nature of the plants for which it is deſigned, than when it is intended for beds or borders. So that if this earth from a paſture, cannot be prepared and mixed at leaſt one year before it is uſed, it will be much better to take the earth of a kitchen-garden which has been well wrought and dunged; but this ſhould be clear from all roots of trees and bad weeds. If this earth is well mixed with the other compoſts ſix months, and often turned over, it will be fitter for pots and tubs, than the other will in twice that time, as I have frequently experienced, ſo can write from knowledge, not from theory. This earth being the principal ingredient in thoſe compoſts deſigned for ſuch plants as require a rich ſoil; the next is to have a quantity of very

rotten dung, from old hot-beds; or for thoſe plants which delight in a cool ſoil, a quantity of rotten neats dung is preferable. The proportion of this muſt be according to the quality of the earth; for if that is poor, there ſhould be one third part of dung, but if it be rich, a fourth part or leſs will be ſufficient. Theſe, when well incorporated and the parts divided, will require no other mixture, unleſs the earth is inclinable to bind, in which caſe it will be proper to add ſome ſand or ſea-coal aſhes to it; if ſea-ſand can be eaſily procured, that is the beſt, the next to that is drift-ſand; but that from pits is by no means proper. The proportion of this muſt be according to the nature of the earth, for if that is ſtiff, there muſt be a greater proportion uſed, but this ſhould not exceed a fifth part, unleſs it is very ſtrong, in which caſe it will require more, and a longer time to lie, and muſt be often turned over before it is uſed.

The next compoſt, which is deſigned for plants which do not require ſo good earth, and naturally grow on looſe ſoils, ſhould be half of the before-mentioned earth from a paſture, or that from a kitchen-garden; and if theſe are inclinable to bind, there ſhould be a third part ſand, and the other part rotten tan, which will be of great uſe to keep the parts divided, and let the moiſture paſs off.

The compoſition for moſt of the ſucculent plants, is prepared with the following materials; the earth from a common, where it is light, taken on the ſurface, one half, the other half ſea or drift-ſand, and old lime-rubbiſh ſcreened of equal parts; theſe, well mixed and often turned over, I have found to anſwer better than any other compoſt, for moſt of the very ſucculent plants.

The other ſort of compoſt, which is deſigned for plants that delight in a very looſe, light, rich earth; ſhould be made of light earth taken from a kitchen-garden, which has been well dunged, and thoroughly wrought, like thoſe near London, one half; of rotten tanners bark one third, and the other part mud from the ſcouring of ditches, or from the bottoms of ponds, where the ſoil is fat: but this mud ſhould lie expoſed in ſmall heaps a whole year, and often turned over before it is mixed with the other, and afterward frequently turned and mixed, for eight months or a year before it is uſed.

In all mixtures, where rotten wood may be required, if the rotten tanners bark, which is taken from old hot-beds is uſed, that will anſwer every purpoſe of the other; and wherever ſand is neceſſary in any compoſt, the ſea-ſand ſhould always be preferred to all other, as it abounds with more ſalts; but this ſhould not be uſed freſh, becauſe the ſalts ſhould be expoſed to the air, which will looſen the particles, and thereby render them better adapted for the nutriment of vegetables.

There are ſome who have directed the uſe of rotten leaves of vegetables, as an excellent ingredient in moſt compoſts; but from many years experience, I can affirm, they are of little uſe, and contain the leaſt quantity of vegetable paſture, of any dreſſing which is uſed. Others, who never have had any experience in the culture of plants, have directed different compoſts for almoſt every plant; and theſe compoſts conſiſt of ſuch a variety of ingredients, as greatly to reſemble the preſcriptions of a quack doctor; for no perſon who has been converſant in the buſineſs of gardening, could be guilty of ſuch groſs abſurdities: for it is well known, that a few different compoſts will be ſufficient for all the known plants in the world. But thoſe who pretend to give direction for the culture of plants from theory only, begin at the wrong end, for the true knowledge of gardening or agriculture, muſt be from experience, and is not to be obtained in a garret.

The ſeveral ſorts of dreſſing for land, will be particularly treated under their reſpective titles, and in general they will be mentioned under the article of DUNG and MANURE.

In making of any compoſt, great care ſhould be had, that the ſeveral parts are properly mixed together, and not to have too much of any one ſort thrown together; therefore, when three or four ſeveral ſorts are to be mixed together, there ſhould be a man or two placed to each ſort, in proportion to the quantity of each; for if two parts of any one ſort are requiſite to be added, there ſhould be two men put to that, and but one to each of the other: and theſe men muſt be careful to ſpread each ſort in ſuch a manner over each other, as that they may be exactly mixed together. Another thing which ſhould be obſerved is, never to lay theſe compoſts in too large heaps, but rather continue them in length, laying them up in a ridge, ſo that the ſun and air may more eaſily penetrate through it: and, as theſe compoſts ſhould (if poſſible) be made a year before they are uſed, that they may enjoy a ſummer's ſun, and winter's froſt, they ſhould be frequently turned over, which will prevent the growth of weeds, and expoſe every part of the heaps equally to the ſun and air, which is of great advantage to all ſorts of compoſts; for the more they are expoſed to the influences of theſe, the better will the earth be prepared for vegetation, which is evinced by the fallowing of land, which, when rightly managed, is equivalent to a dreſſing.

COMPOUND FLOWERS are ſuch as conſiſt of many florets, or ſemiflorets, or both together, which are included in one common empalement, ſo make up what is commonly called one whole flower.

CONE. A cone is a hard, dry, ſeed-veſſel of a conical figure, conſiſting of ſeveral woody parts; and is, for the moſt part ſcaly, adhering cloſely together, and ſeparating when ripe.

CONIFEROUS-TREES are ſuch as bear cones; as, the Cedar of Lebanon, Fir, Pine, &c.

CONIUM. Lin. Gen. Plant. 299. Cicuta. Tourn. Inſt. R. H. 306. tab. 160. Hemlock.

The CHARACTERS are,

It is an umbelliferous plant; the general umbel is compoſed of ſeveral ſmall ones termed rays, which ſpread open, the rays or ſmall umbels are alſo ſpread in the like manner. Both theſe have involucrums, compoſed of many ſhort leaves. The petals of the greater umbel are uniform; each flower is compoſed of five unequal heart-ſhaped petals, which turn inward; they have five ſtamina, which are terminated by roundiſh ſummits. The germen, which is ſituated under the flower, ſupports two reflexed ſtyles, crowned by obtuſe ſtigmas. The germen afterward becomes a roundiſh channelled fruit, divided into two parts, containing two ſeeds, which are convex and furrowed on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. CONIUM (*Maculatum*) ſeminibus ſtriatis. Hort. Cliff. 92. *Conium with ſtriated ſeeds.* Cicuta major. C. B. P. 160. *Greater Hemlock.*
2. CONIUM (*Tenuifolium*) ſeminibus ſtriatis, foliolis tenuioribus. *Conium with ſtriated ſeeds and narrower leaves.* Cicuta major, foliis tenuioribus. C. B. P. 160. *Greater Hemlock with narrower leaves.*
3. CONIUM (*Africanum*) ſeminibus aculeatis. Hort. Cliff. 92. *Hemlock with prickly ſeeds.* Caucalis Africana, folio minore, Rutæ. Boerh. Ind. alt. Sp. 63.

The firſt ſort grows naturally on the ſide of banks and roads in many parts of England; this is a biennial plant, which periſhes after it hath ripened ſeeds. It hath a long taper root like a Parſnep, but much ſmaller. The ſtalk is ſmooth, ſpotted with purple, and riſes from four, to upwards of ſix feet high, branching out toward the top into ſeveral ſmaller ſtalks, garniſhed with decompounded leaves, whoſe lobes are cut at the top into three parts; theſe are of a lucid green, and have a diſagreeable ſmell. The ſtalks are terminated by umbels of white flowers, each being compoſed of about ten rays (or ſmall umbels) and have a great number of flowers, which ſpread open, each ſitting upon a diſtinct foot-ſtalk; the ſeeds are ſmall and channelled, and like thoſe of Aniſeed.

Aniſeed. It flowers in June, and the ſeeds ripen in autumn.

The ſecond ſort differs from the firſt, in having taller ſtalks, which are not ſo much ſpotted. The leaves are much narrower, and of a paler green; and this difference is conſtant, for I have cultivated it near twenty years in the Chelſea garden, where it has not varied. The ſeeds were ſent me from Germany, where it grows naturally. This is biennial as the former.

The third ſort grows naturally near the Cape of Good Hope, in Africa, from whence the ſeeds were brought to Holland, where the plants have been preſerved in ſome of their curious gardens of plants. The ſeeds of this plant were ſent me by the late Dr. Boerhaave, profeſſor of Botany at Leyden. This plant rarely grows more than nine inches high; the lower leaves are divided ſomewhat like thoſe of the ſmall wild Rue, and are of a grayiſh colour; thoſe upon the ſtalk are much narrower, but of the ſame colour; theſe are terminated by umbels of white flowers, each of the larger umbels being compoſed of three ſmall ones; the involucrum hath three narrow leaves, ſituated under the umbel. This flowers in July, and ripens ſeed in autumn, ſoon after which the plants decay.

The firſt ſort grows wild in moſt parts of England, ſo is ſeldom allowed room in gardens, becauſe it is ſuppoſed to have a poiſonous quality; ſome phyſicians have affirmed that it is ſo to all animals, while others have aſſured us, that it is eaten by the inhabitants of ſome parts of Italy when it is young, and is by them eſteemed a great dainty. Mr. Ray mentions that he has found the gizzard of a thruſh, full of Hemlock ſeeds, with four or five grains of Corn, intermixed with it, which, in the time of harveſt, that bird had neglected for Hemlock, ſo very fond was it of that ſeed which we reckon pernicious. However, it is very certain, that ſcarce any animal will eat the green herb; for it is very common to ſee the graſs, and moſt other weeds eat cloſe where cattle are allowed to feed, and all the plants of Hemlock, which were growing left untouched.

This plant is eſteemed by many phyſicians, as an excellent remedy to diſſolve ſchirrous tumors; and ſome have greatly recommended it for cancers, and moſt of them agree, that it may be preſcribed as a good narcotic.

The ſecond ſort is preſerved in ſome botanic gardens for the ſake of variety. If the ſeeds of this are permitted to ſcatter, the plants will come up in plenty, ſo if they are not rooted out, will become as troubleſome weeds as the firſt ſort.

The third ſort is an humble plant, and being tender, will never become troubleſome; for unleſs the winters are very favourable, this plant will not live in the open air in England. The ſeeds of this ſort ſhould be ſown in pots in autumn ſoon after they are ripe, and placed under a common frame in winter, where they may be expoſed to the open air at all times when the weather is mild, and only covered in bad weather. The plants will come up very early in the ſpring, and muſt then be expoſed to the open air conſtantly when the weather will permit, otherwiſe they will draw up very weak. As theſe plants do not bear tranſplanting well, they ſhould be thinned, and not more than four or five left in each pot; and as the plants have no great beauty, a few of them will be ſufficient to continue the ſort, where a variety of plants are preſerved. The other culture is only to keep them clean from weeds, and in very dry weather to water them.

There is another ſpecies of this genus according to moſt of the botaniſts, which is now ſeparated from it, and placed ſingly, under the title of Æthuſa. This was titled, Cicuta minor petroſelino ſimilis, by Caſpar Bauhin, i. e. *Smaller Hemlock with the appearance of Parſley*. This is a weed which frequently is found in gardens, eſpecially in rich ground, and is generally ſuppoſed to be very poiſonous: ſome perſons who have ignorantly gathered this herb, and uſed it for Parſley, having been poiſoned by it. Therefore it was formerly called Fools Parſley. This may be diſtinguiſhed from Parſley, by the narrowneſs of the ſmall leaves, which are alſo more pointed, and of a darker green. But thoſe who are afraid of being deceived in this, ſhould always uſe the curled Parſley, which is ſo different from this, that it cannot be miſtaken for it.

CONNARUS. Zeylon Sumach.

The CHARACTERS are,

It hath a woolly erect empalement of one leaf, cut into five ſegments, which is permanent, and five ſpear-ſhaped erect petals which are equal; it has ten awl-ſhaped ſtamina, which are joined at their baſe, and are alternately long and ſhort, terminated by roundiſh ſummits, and a round germen ſupporting a cylindrical ſtyle, crowned by an obtuſe ſtigma; the empalement afterward becomes an oblong gibbous capſule opening with two valves, having one cell, incloſing one large oval ſeed.

This genus of plants is ranged in the ſecond order of Linnæus's ſixteenth claſs, intitled Monodelphia Decandria, the flower having ten ſtamina, which are joined in one houſe.

We know but one SPECIES of this genus, viz.

CONNARUS (*Monocarpos*). Flor. Zeyl. 248. *One ſeeded Connarus.* Rhus Zeylanicus trifoliatus, phaſeoli facie, floribus copioſis ſpicatis. Burn. Zeyl. 199. tab. 89.

This plant grows naturally in India; it riſes with a ligneous ſtalk eight or ten feet high, which is hard, rigid, and covered with a black bark, and divides upward into two or three branches, garniſhed with trifoliate leaves, having long foot-ſtalks placed alternate; the lobes are oval, ſmooth, and entire, each having a ſhort petiolus faſtened to the foot-ſtalk; theſe remain green the whole year: the flowers are produced in large panicles at the extremity of the branches, they are ſmall, hairy, and of a greeniſh yellow colour, but are rarely ſucceeded by ſeeds in Europe.

This plant is uſually propagated in the gardens by laying down the young branches, which, if tongued, (in the manner practiſed for Carnations) and duly watered, will put out roots in twelve months, when they may be cut off from the old plants, and each planted in a ſeparate ſmall pot, filled with freſh light earth, plunging them into a moderate hot-bed, to forward their taking new root, obſerving to ſhade them from the ſun every day, and to water them as they may require it: after this the plants ſhould be treated in the ſame way as other exotic plants which are not too tender, placing them in a dry ſtove in winter, and for about three months in the ſummer they may be removed into the open air, in a warm ſheltered ſituation.

The cuttings of this plant will ſometimes take root, if they are planted in pots, plunged into a moderate hot-bed of tanners bark, and cloſely covered with hand-glaſſes, or ſmall bell-glaſſes; but unleſs they are carefully managed they ſeldom ſucceed.

If freſh ſeeds can be procured from abroad, they ſhould be ſown in ſmall pots, plunged into a moderate hot-bed, and when the plants are fit to remove they ſhould be ſeparated, planting each into a ſeparate pot, and plunged into a moderate hot-bed, treating them in the manner as the layers.

CONOCARPODENDRON. See PROTEA.

CONOCARPUS. Lin. Gen. Plant. 236. Rudbeckia. Houſt. Nov. Gen. 21. Button-tree, vulgò.

The CHARACTERS are,

The flowers are collected in a globular head, each ſtanding in a ſcaly empalement. At the bottom is ſituated a large compreſſed germen, crowned by the empalement of the flower, which is ſmall, ſharp-pointed, and divided into five parts at the top. The flower hath five petals; it hath five, or ſometimes ten ſlender ſtamina, which extend beyond the petals, terminated by globular ſummits. The germen is large, compreſſed, and obtuſe, ſupporting a ſingle ſtyle which is longer than the ſtamina, and is crowned by an obtuſe ſtigma. The germen afterward becomes a ſingle ſeed, incloſed in the ſcale of the fruit, which is ſhaped like the cone of Alder.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, from the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CONOCARPUS (*Erecta*) foliis lanceolatis erecta. Lin. Sp. 250. *Upright Conocarpus with ſpear-ſhaped leaves.* Rudbeckia erecta longifolia. Houſt. MSS. *Commonly called Button-tree in the Weſt-Indies.*
2. CONOCARPUS (*Procumbens*) fruteſcens, procumbens, foliis ovatis, craſſis, floribus alaribus & terminalibus. *Shrubby trailing Conocarpus with oval thick leaves, and flowers growing on the ſides, at the ends of the branches.* Rudbeckia maritima procumbens rotundifolia. Houſt. MSS. *Maritime trailing Rudbeckia, with a round leaf.*

The firſt ſort grows plentifully in moſt of the ſandy bays, in all the iſlands of the Weſt-Indies. It riſes with a woody upright ſtem about ſixteen feet high, ſending out many ſide branches, which alſo grow erect; theſe are garniſhed with ſpear-ſhaped leaves, having broad ſhort foot-ſtalks, and are placed alternate on every ſide the branches. The flowers grow upon ſhort branches, which ariſe from the wings of the leaves; theſe have three or four ſmall leaves on their lower part, under the flowers; each of theſe branches are terminated by ſix or eight conical heads of flowers, which have ſome reſemblance to thoſe of Acacia, but each of theſe come out of a ſcaly covering; the flowers are ſmall, of a reddiſh colour, having five ſlender ſtamina, and one ſtyle, which ſtand out farther than the petal. The flowers are ſucceeded by ſingle ſeeds, which are included in the ſcales of the conical fruit.

The ſecond ſort hath ſhort crooked branches, which divide and ſpread out on every ſide upon the ground; theſe are covered with a grayiſh bark, and their upper parts are garniſhed with oval thick leaves, a little larger than thoſe of the Dwarf Box; they have very ſhort foot-ſtalks, and are placed on every ſide the branches without order. The flowers are collected in ſmall round heads, which come out ſingle from the ſide of the branches, and in looſe ſpikes at the end; theſe are ſmall, and of an herbaceous colour; the ſcales are rough, and the cones are of a looſer texture than thoſe of the former ſort.

This was diſcovered by the late Dr. William Houſtoun, growing plentifully in the marſhy grounds near the ſea, at the Havannah, from whence he ſent the ſeeds to England, in 1730.

Both theſe ſorts are preſerved in ſome curious gardens for the ſake of variety, but they are plants of no great beauty: they are propagated from ſeeds, which muſt be obtained from the places of their natural growth, for they never produce any good ſeeds in Europe: theſe ſeeds, if they are freſh, will come up very ſoon, if they are ſown upon a good hot-bed; and if the plants are potted, and preſerved in the bark-ſtove, they will make great progreſs; but they are too tender to live in this country, unleſs they are conſtantly kept in the ſtove, and treated in the ſame manner with other exotic plants; obſerving, as they are natives of ſwamps, to ſupply them often with water; but in winter they muſt have it very ſparingly. The plants are Evergreen, caſting off their old leaves when the new come out.

CONSOLIDA MAJOR. See SYMPHYTUM.

CONSOLIDA MEDIA. See BUGULA.

CONSOLIDA MINIMA. See BELLIS.

CONSOLIDA REGALIS. See DELPHINIUM.

CONVALLARIA. Lin. Gen. Plant. 383. Lilium Convallium. Tourn. Inſt. R. H. 77. tab. 14. *Lily of the valley.* To this genus Dr. Linnæus has joined the Polygonatum of Tournefort, or Solomon's Seal.

The CHARACTERS are,

The flower hath one petal, which is bell-ſhaped, and divided at the brim into ſix obtuſe ſegments which ſpread open and are reflexed. It hath no empalement. It hath ſix ſtamina, which are inſerted into the petal, but are ſhorter, terminated by oblong ſummits, which are erect. In the center is ſituated a globular germen, ſupporting a ſlender ſtyle, which is longer than the ſtamina, crowned by a three cornered obtuſe ſtigma. The germen afterward becomes a globular berry, with three cells, containing one roundiſh ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. CONVALLARIA (*Majalis*) ſcapo nudo. Flor. Lapp. 113. *Convallaria with a naked ſtalk.* Lilium convallium album. C. B. P. 304. *White Lily of the Valley.* There is a variety of this with reddiſh flowers, which is preſerved in gardens, titled by Caſpar Bauhin Lilium Convallium flore rubente. Pin. 304.
2. CONVALLARIA (*Latifolia*) ſcapo nudo, foliis latioribus. *Convallaria with a naked ſtalk and broader leaves.* Lilium Convallium latifolium. C. B. P. 136. *Broad-leaved Lily of the Valley.* There is alſo a variety of this with double variegated flowers which is preſerved in gardens. This Tournefort titles Lilium Convallium latifolium, flore pleno variegato. Inſt. R. H. 77. *Broad-leaved Lily of the Valley, with a large variegated flower.*
3. CONVALLARIA (*Multiflora*) foliis alternis, amplexicaulibus caule tereti axillaribus pedunculis multifloris. *Convallaria with leaves placed alternate, embracing the taper ſtalk, whoſe foot-ſtalks have many flowers.* Polygonatum latifolium vulgare. C. B. P. 305. *Common broad-leaved Solomon's Seal.*
4. CONVALLARIA (*Odorata*) foliis alternis, ſemiamplexicaulibus, floribus majoribus axillaribus. *Convallaria with alternate leaves which half embrace the ſtalks, and larger ſweet-ſcented flowers.* Polygonatum latifolium, flore majore odoro. C. B. P. 303.
5. CONVALLARIA (*Polygonatum*) foliis alternis amplexicaulibus, caule ancipti, pedunculis axillaribus ſubunifloris. Lin. Mat. Med. 168. *Convallaria with alternate leaves embracing the ſtalks, and foot-ſtalks having one flower.* Polygonatum floribus ex ſingula tribus pedunculis. C. B. 3. p. 530. *Common Solomon's Seal.*
6. CONVALLARIA (*Stellata*) foliis amplexicaulibus plurimis. Lin. Sp. 452. *Convallaria with many leaves embracing the ſtalks.* Polygonatum Canadenſe ſpicatum fertile. Cornut. Canad. 33.
7. CONVALLARIA (*Verticillata*) foliis verticillatis. Flor. Lapp. 114. *Convallaria with leaves growing in whorls.* Polygonatum anguſtifolium, non ramoſum. C. B. P. 303.
8. CONVALLARIA (*Racemoſa*) foliis ſeſſilibus, racemo terminali compoſito. Lin. Sp. Plant. 452. *Convallaria with leaves ſitting cloſe to the ſtalks, which are terminated by compound ſpikes of flowers.* Polygonatum Virginianum erectum, ſpicatum, flore ſtellato ſterili. Mor. Hiſt. 3. 537.
9. CONVALLARIA (*Bifolia*) foliis cordatis. Flor. Lapp. 113. *Convallaria with heart-ſhaped leaves.* This is the Smilax unifolio humillima. Tourn. Inſt. App. 564. *Loweſt Smilax with a ſingle leaf*; *and the* Lilium Convallium minus. C. B. P. 304. *The leaſt Lily of the Valley.*

The firſt ſort grows naturally in great plenty in the woods near Woburn, in Bedfordſhire, from whence the markets in London are generally ſupplied with the flowers. It is alſo cultivated in gardens for the ſweetneſs of the flowers, and formerly it grew in great plenty on Hampſtead-heath, but of late years it has been ſeldom found there; for ſince all the trees have been deſtroyed, the plants have not flowered there as formerly, nor have the roots increaſed.

This hath a ſlender fibrous root, which creeps under the ſurface of the ground, and thereby propagates in great plenty. The leaves come up by pairs; their foot-ſtalks, which are about three inches long, are wrapped together in one cover, and at the top divide into two parts, each ſuſtaining a ſingle leaf, one of which riſes a little above the other; theſe leaves are from four to five inches long, and near an inch and a half broad in the middle, leſſening gradually to both ends; they have many longitudinal veins, running parallel

parallel to the midrib, which is not ſituated exactly in the middle, but diverges to one ſide; the foot-ſtalks of the flowers ariſe immediately from the root, on one ſide the leaves; theſe are naked, about five inches long, adorned toward their upper parts with pendulous white flowers, ranged on one ſide the ſtalk, which decline to one ſide; each flower ſtands upon a ſhort ſeparate foot-ſtalk, which are bending and crooked. The flowers are of the ſhort bell-ſhaped kind, their brims being reflexed, which are ſlightly cut into ſix parts; they have ſix ſtamina, which are inſerted in the petal of the flower, and are ſhorter than the tube, and a ſingle ſtyle ariſing from the germen, which is triangular, crowned by a three-cornered ſtigma; the germen afterward becomes a globular berry, of a red colour when ripe, incloſing three roundiſh ſeeds. It flowers in May, from whence it has been titled May Lily. The ſeeds ripen in autumn. The flowers of this ſort are uſed in medicine; they are eſteemed cephalic and cordial, ſo are recommended for palſies, epilepſies, and ſpaſms; there is prepared a conſerve, and a compound diſtilled water of the flowers. This compound water is by the Germans titled aqua aurea, or *golden water*, becauſe of its excellent virtues.

There is another variety of this mentioned with narrow leaves, which I ſuppoſe may ariſe from the ſoil, or ſituation, for the roots which I have taken up in places where they have naturally narrow leaves, when planted in the garden, have produced leaves as broad as the common ſort; but the ſort with red flowers has conſtantly continued the ſame above forty years, without any variation. The flowers of this are ſmaller, the ſtalks are redder, and the leaves of a darker green than thoſe of the common ſort; but as I have not propagated this ſort by ſeeds, I cannot be ſure if it is a diſtinct ſpecies, or only a ſeminal variety.

The ſecond ſort I received from the Alps, where it naturally grows; this has retained its difference in the garden, where it grew in the ſame ſoil and ſituation with the common ſort, ſo I make no doubt of its being a diſtinct ſpecies. The other with a double variegated flower is ſuppoſed to be only a variety of this, therefore I have not enumerated it as a different ſort, but the flowers are much larger, and beautifully variegated with purple and white. I received a plant of this ſort from the royal garden at Paris, which has flowered ſeveral years in the Chelſea garden, but the roots do not increaſe ſo much as the common ſort.

Theſe plants require a looſe ſandy ſoil, and a ſhady ſituation; they are propagated by parting of their roots, which multiply in great plenty. The beſt time to tranſplant and part the roots, is in autumn. They ſhould be planted near a foot aſunder, that their roots may have room to ſpread, for if they agree with the ſoil and ſituation, they will meet and fill the ground in one year. If theſe roots are planted in a rich ſoil, they will ſpread and multiply greatly, but will not be ſo productive of flowers.

The only culture which theſe plants require, is to keep them clean from weeds, and to tranſplant and ſeparate the roots every third or fourth year, otherwiſe they will be ſo greatly matted together, as not to have proper nouriſhment, ſo the flowers will be ſmall, and few in number.

The third ſort is a native of the Alps and Appennines; the ſtalks of this (when growing in good ground) generally riſe three feet high; they are taper, and garniſhed with oblong oval leaves placed alternate, embracing the ſtalks with their baſe; they have ſeveral longitudinal veins, reſembling the leaves of white Hellebore: the foot-ſtalks of the flowers are produced from the wings of the leaves, which ſupport four or five flowers on each; theſe flowers are larger than thoſe of the common ſort, but their tubes are more contracted, and are ſucceeded by pretty large berries, which when ripe turn of a bluiſh colour; it flowers in May and June, and the ſeeds ripen in autumn.

The fourth ſort is the broad-leaved Solomon's Seal, which is ſaid to grow naturally in England, but I doubt ours is different from that mentioned by Caſpar Bauhin under that title; for in two places where I have found it growing, the ſtalks were much ſhorter, the leaves were broader, and their borders turned inward, and this difference continues in the garden where it grows in the ſame ſoil and ſituation with the common ſort.

The fifth ſort is the common Solomon's Seal; this hath a fleſhy white root, as large as a man's finger, which multiplies in the ground, and is full of knots, from whence it had the name of Polygonatum, or many knees. In the ſpring ariſe ſeveral taper ſtalks, which grow near two feet high, adorned with oblong oval leaves, placed alternate, having many longitudinal veins running parallel to the middle, and embrace the ſtalk with their baſe; theſe are ranged on one ſide of the ſtalk, and on the oppoſite ſide come out the foot-ſtalks of the flowers, which are about an inch long, dividing at the top into three or four ſmaller, each ſuſtaining a ſingle tubulous flower, cut into ſix parts at the brim, where it is green, the lower part of the tube being white; they have each ſix ſlender ſtamina, ſurrounding a ſingle ſtyle, which ariſes from the germen, and is crowned by a blunt ſtigma; the germen afterward becomes a round berry, about the ſize of Ivy berries, each incloſing three ſeeds. This flowers in May, and the ſeeds ripen in autumn, and then the ſtalks decay.

The ſixth ſort riſes with an upright ſtalk about two feet high, garniſhed with long narrow leaves, which ſtand in whorls round the ſtalk; there are generally five of theſe placed at each joint, which are four inches long, and half an inch broad, ſmooth, and of a light green. The flowers come out from the ſame joints, ſtanding upon ſhort foot-ſtalks, each ſupporting five or ſix flowers, which are ſmaller, and have much ſhorter tubes than either of the former ſorts; they are of a dirty white, tipped with green, and ſlightly cut into ſix parts at the top. It grows naturally in the northern parts of Europe.

The ſeventh ſort grows naturally in moſt parts of North America; I have received plants of this from New England, Philadelphia, and ſeveral other places. This riſes with an upright ſtalk near two feet high, garniſhed with oblong leaves, ending in ſharp points; they are near five inches long, and two and a half broad, having three large longitudinal veins, with ſeveral ſmaller between, which join at both ends. The leaves are alternate, ſtanding cloſe to the ſtalks, and are of a light green on their upper ſide, but are paler on their under. The flowers are produced in branching ſpikes at the extremity of the ſtalks, each being compoſed of ſeveral ſmall looſe ſpikes of ſtar-like flowers, of a pale yellow, which fall away without producing any ſeed. This flowers the latter end of May, or the beginning of June, and the ſtalks decay in autumn; but the root is perennial, and propagates by offsets.

The eighth ſort is a native of the ſame countries as the laſt mentioned; this ſends up ſtalks two feet high, garniſhed with many oblong leaves embracing the ſtalks with their baſe. The flowers are produced in ſingle ſpikes at the top of the ſtalks, which are in ſhape and colour like thoſe of the ſeventh; but theſe are ſucceeded by ſmall red berries, about the ſize of thoſe of the Lily of the Valley. This ſort flowers the beginning of June, and the berries ripen in autumn.

All the ſorts of Solomon's Seal are very hardy plants; they delight in a light ſoil and a ſhady ſituation, ſo are very proper to plant in wilderneſs quarters under tall trees, where if they are not crowded by lower ſhrubs, they will thrive and multiply exceedingly, and during the ſummer ſeaſon will make an agreeable variety, the whole appearance of the plants being very ſingular.

They all multiply very faſt by their creeping roots, eſpecially when they are planted in a proper ſoil and ſituation. The beſt time to tranſplant and part the roots

roots is in autumn, ſoon after their ſtalks decay; thoſe which are removed at that ſeaſon, will grow much ſtronger than thoſe which are planted in the ſpring, which is the reaſon of my preferring that ſeaſon; but they may be ſafely tranſplanted any time after the ſtalks decay, till the roots begin to ſhoot in the ſpring. As theſe roots greatly increaſe, they ſhould be planted at a wide diſtance from each other, that they may have room to ſpread; for they ſhould not be removed oftener than every third or fourth year, where they are expected to grow ſtrong, and produce a good number of ſtalks, in which their beauty conſiſts. The only culture theſe plants require, is to dig the ground between them every ſpring, and keep them clean from weeds.

The roots of the fifth ſort are uſed in medicine, and are greatly recommended for their efficacy in all manner of contuſions. The diſtilled water of the plant clears the face and beautifies the complexion: a decoction of it cures the itch, and ſuch like cutaneous diſtempers.

CONVOLVULUS. Lin. Gen. Plant. 198. Tourn. Inſt. R. H. 82. tab. 77. Bindweed. It is ſo titled from convolvendo, *Lat.* rolling round, or twining about.

The CHARACTERS are,

It hath a permanent empalement of one leaf, which is divided into five parts at the top; the flower hath one large bell-ſhaped petal, which ſpreads open. It hath five ſhort ſtamina, terminated by oval compreſſed ſummits, and a roundiſh germen, ſupporting a ſlender ſtyle, crowned by two broad oblong ſtigmas. The empalement afterward becomes a roundiſh capſule, with one, two, or three valves, containing ſeveral ſeeds which are convex on their outſide, but on the inſide angular.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CONVOLVULUS (*Arvenſis*) foliis ſagittatis utrinque acutis, pedunculis unifloris. Flor. Suec. 173. *Bindweed with arrow-ſhaped leaves pointed on both ſides, and a ſingle flower on each foot-ſtalk.* Convolvulus minor arvenſis. C. B. P. 294. *Smaller Field Bindweed, commonly called Gravel Bindweed.*
2. CONVOLVULUS (*Sepium*) foliis ſagittatis poſticè truncatis, pedunculis tetragonis unifloris. Prod. Leyd. 427. *Bindweed with arrow-ſhaped leaves, which are torn behind, and a ſingle flower on each foot-ſtalk.* Convolvulus major albus. C. B. P. *Larger white Bindweed, called Bearbind.*
3. CONVOLVULUS (*Scammonia*) foliis ſagittatis poſticè truncatis, pedunculis teretibus ſubtrifloris. Prod. Leyd. 427. *Bindweed with arrow-ſhaped leaves torn behind, and two flowers on each foot-ſtalk.* Convolvulus Syriacus & Scammonia Syriaca. Mor. Hiſt. 2. p. 12. *Syrian Bindweed and Syrian Scammony.*
4. CONVOLVULUS (*Purpureus*) foliis cordatis indiviſis fructibus cernuis pedicellis incraſſatis. Lin. Sp. 219. *Bindweed with heart-ſhaped undivided leaves, nodding fruit, and ſwelling foot-ſtalks.* Convolvulus purpureus, folio ſubrotundo. C. B. P. 295. *Purple Bindweed with a roundiſh leaf, commonly called* Convolvulus major, or *Greater Bindweed.*
5. CONVOLVULUS (*Indicus*) foliis cordatis, acuminatis, pedunculis trifloris. *Bindweed with heart-ſhaped pointed leaves, and three flowers on each foot-ſtalk.* Convolvulus major, folio ſubrotundo, flore amplo purpureo. Sloan. Cat. Jam. 55. *Greater Bindweed with a roundiſh leaf, and a large purple flower.*
6. CONVOLVULUS (*Nil*) foliis cordatis trilobis villoſis, calycibus lævibus, capſulis hirſutis, pedunculis bifloris. *Bindweed with heart-ſhaped leaves, having three lobes, which are hairy, ſmooth flower-cups, hairy ſeed-veſſels, and two flowers on each foot-ſtalk.* Convolvulus cæruleus hederaceo anguloſo folio. C. B. P. 295. *Blue Bindweed with an angular Ivy leaf.*
7. CONVOLVULUS (*Batatas*) foliis cordatis haſtatis quinquenerviis, caule repente hiſpido tubifero. Lin. Sp. Plant. 154. *Bindweed with ſpear heart-ſhaped leaves, five nerves, and a creeping ſtinging ſtalk bearing tubers.* Convolvulus radice tuberoſâ eſculensâ minore purpurea. Sloan. Cat. Jam. 54. *Bindweed with a ſmall, purple, tuberous, eſculent root, commonly called Spaniſh Potatoes.*
8. CONVOLVULUS (*Palmatis*) foliis palmatis, lobis ſeptem-ſinuatis acutis, pedunculis unifloris, calycibus maximis patentibus. *Bindweed with palmated leaves, with ſeven ſinuated pointed lobes, a ſingle flower on each foot-ſtalk, and a large ſpreading empalement.* Convolvulus pentaphyllos, folio glabro dentato, viticulis hirſutis. Plum. Cat.
9. CONVOLVULUS (*Ariſtolochiofolius*) folio haſtato lanceotis, auriculis rotundatis, pedunculis multifloris. *Bindweed with ſpear-pointed leaves, having rounded ears, and many flowers on each foot-ſtalk.* Convolvulus Americanus, Ariſtolochiæ folio longiore, floribus plurimis ex uno pediculo inſidentibus. Houſt. MSS.
10. CONVOLVULUS (*Hirtus*) foliis cordatis ſubhaſtatiſque villoſis, caule petioliſque piloſis, pedunculis multifloris. Lin. Sp. Plant. 159. *Bindweed with heart-ſhaped leaves, ſomewhat ſpear-pointed and downy, with hairy ſtalks and foot-ſtalks, having many flowers.* Convolvulus Americanus Polyanthos, Althææ folio villoſo. Houſt. MSS.
11. CONVOLVULUS (*Glabrus*) foliis ovato oblongis, glabris pedunculis unifloris, calycibus decempartitis. *Bindweed with oval, oblong, ſmooth leaves, and foot-ſtalks having a ſingle flower, whoſe empalement is cut into ten parts.* Convolvulus foliis oblongis, glabris floribus amplis purpureis. Houſt. MSS.
12. CONVOLVULUS (*Pentaphyllos*) hirſutiſſimus, foliis quinquelobatis, pedunculis longiſſimis bifloris. *Very hairy Bindweed, with leaves having five lobes, and very long foot-ſtalks, with two flowers.* Convolvulus pentaphyllos hirſutis. Plum. Cat.
13. CONVOLVULUS (*Fruteſcens*) caule fruticoſo, glabro, foliis quinque lobis, pedunculis geniculatis unifloris, capſulis maximis. *Bindweed with a ſhrubby ſmooth ſtalk, leaves having five lobes, many jointed foot-ſtalks with one flower, and very large ſeed-veſſels.* Convolvulus pentaphyllos, flore & fructu purpureis maximis. Plum. Cat.
14. CONVOLVULUS (*Braſilienſis*) foliis emarginatis, baſi biglanduloſis, pedunculis trifloris. Lin. Sp. Plant. 159. *Bindweed with indented leaves, having two glands and foot-ſtalks, with three flowers.* Convolvulus marinus Catharticus, folio rotundo, flore purpureo. Plum. Pl. Amer. 89. tab. 104.
15. CONVOLVULUS (*Multiflorus*) foliis cordatis, glabris, pedunculis multifloris, ſemine villoſo ferrugineo. *Bindweed with ſmooth heart-ſhaped leaves, foot-ſtalks having many flowers, and ſeeds covered with an iron-coloured down.* Convolvulus Americanus vulgaris folio, capſulis triquetris numeroſis, ex uno puncto, longis petiolis propendentibus, ſemine lanugine ferrugineâ villoſa. Pluk. Phyt. tab. 167. f. 1.
16. CONVOLVULUS (*Canarienſis*) foliis cordatis pubeſcentibus, caule perenni, villoſo, pedunculis multifloris. Lin. Sp. Plant. 155. *Bindweed with ſoft, woolly, heart-ſhaped leaves, a hairy perennial ſtalk, and foot-ſtalks having many flowers.* Convolvulus Canarienſis ſempervirens, foliis mollibus & incanis. Hort. Amſt. 2. p. 101.
17. CONVOLVULUS (*Hederaceus*) foliis triangularibus acutis, floribus plurimis ſeſſilibus patulis, calycibus acutis multifidis. *Bindweed with ſharp-pointed triangular leaves, many ſpreading flowers ſet cloſe to the ſtalk, and acute empalements ending in many points.* Convolvulus folio hederaceo, anguloſo, lanuginoſo, flore magno, cæruleo, patulo. Sloan. Cat. Jam. 56.
18. CONVOLVULUS (*Roſeus*) foliis cordatis, acuminatis pedunculis bifloris. *Bindweed with heart-ſhaped pointed leaves, and foot-ſtalks having two flowers.* Convolvulus Americanus hirſutus, folio acuminato, flore amplo roſeo. Houſt. MSS.
19. CONVOLVULUS (*Repens*) foliis ſagittatis poſticè obtuſis, caule repente, pedunculis unifloris. Lin. Sp. Plant. 158. *Bindweed with narrow-pointed leaves, which are obtuſe at the foot-ſtalk, a creeping ſtalk, and one*

flower on each foot-ſtalk. Convolvulus marinus catharticus, foliis Acetoſæ, flore niveo. Plum. Pl. Am. 89. tab. 105.

20. Convolvulus (*Betonicifolius*) foliis cordato ſagitatis, pedunculis unifloris. *Bindweed with heart-ſhaped arrow-pointed leaves, and foot-ſtalks having a ſingle flower.* Convolvulus exoticus, Betonicæ folio, flore magno albo fundo purpureo. Cat. Hort. R. Par.

21. Convolvulus (*Siculus*) foliis cordato ovatis, pedunculis unifloris, bracteis lanceolatis, flore ſeſſile. Hort. Cliff. 68. *Bindweed with oval heart-ſhaped leaves, foot-ſtalks having one flower, ſpear-ſhaped bracteæ, and the flower ſitting cloſe to the ſtalk.* Convolvulus ſiculus minor, flore parvo auriculato. Bocc. Pl. Sic. 89.

22. Convolvulus (*Elegantiſſimus*) foliis palmatis ſericeis, pedunculis bifloris, calycibus acutis. *Bindweed with ſilky palmated leaves, foot-ſtalks having two flowers, and ſharp-pointed empalements.* Convolvulus argentibus, elegantiſſimus, foliis tenuiter inciſis. Tourn. Inſt. R. H. 85.

23. Convolvulus (*Altheoides*) foliis cordatis inciſis & incanis, pedunculis bifloris, calycibus obtuſis. *Bindweed with hoary heart-ſhaped leaves, which are jagged, foot-ſtalks having two flowers, and obtuſe empalements.* Convolvulus argenteus folio althææ. C. B. P. 295.

24. Convolvulus (*Tricolor*) foliis lanceolato-ovatis glabris, caule declinato, floribus ſolitariis. Vir. Cliff. 68. *Bindweed with oval ſpear-ſhaped leaves, a declining ſtalk, with one flower on each foot-ſtalk.* Convolvulus Luſitanicus flore Cyaneo Broſs; *commonly called Convolvulus minor.*

25. Convolvulus (*Cantabrica*) foliis linearibus acutis caule ramoſo ſubdichotomo, calycibus piloſis. Lin. Sp. 225. *Bindweed with narrow ſpear-ſhaped leaves, a branching ſtalk, and hairy empalements.* Convolvulus linariæ folio aſſurgens. Tourn. Inſt. R. H. 83.

26. Convolvulus (*Lineatus*) foliis lanceolatis, ſericeis, lineatis petiolatis pedunculis bifloris, calycibus ſereceis ſubfoliaceis. Lin. Sp. 224. *Bindweed with ſilky ſpear-ſhaped leaves, having foot-ſtalks, with two flowers on each foot-ſtalk, having ſilky empalements.* Convolvulus minor, argenteus, repens, acaulis ferme. H. R. Par.

27. Convolvulus (*Cneorum*) foliis lanceolatis tomentoſis, floribus capitatis, calycibus hirſutis caule erectiuſculo. Lin. Sp. 224. *Bindweed with ſpear-ſhaped woolly leaves, foot-ſtalks and flowers growing in heads, terminating the ſtalks, which are erect.* Convolvulus argenteus umbellatus, erectis. Tourn. Inſt. R. H. 84.

28. Convolvulus (*Linarifolius*) foliis lineari lanceolatis, acutis caule ramoſo, recto, pedunculis unifloris. Hort. Cliff. 68. *Bindweed with narrow ſpear-ſhaped leaves, which are pointed, upright branching ſtalks, and foot-ſtalks with one flower.* Convolvulus ramoſus incanus, foliis piloſellæ. C. B. P. 295.

29. Convolvulus (*Soldanella*) foliis reniformibus, pedunculis unifloris. Hort. Cliff. 67. *Bindweed with kidney-ſhaped leaves, and one flower on each foot-ſtalk.* Soldanella maritima minor. C. B. P. 295. *Leſſer Sea Bindweed.*

30. Convolvulus (*Turpethum*) foliis cordatis, angulatis, caule membranaceo, quadrangulari, pedunculis multifloris. Flor. Zeyl. 72. *Bindweed with angular heart-ſhaped leaves, a quadrangular membranaceous ſtalk, and foot-ſtalks having many flowers.* Convolvulus Zeylanicus, alatus, maximis, foliis Ibiſci nonnihil ſimilibus anguloſis. Herm. Lud. 177. tab. 178. *Turbith of the ſhops.*

31. Convolvulus (*Jalapa*) foliis variis, pedunculis unifloris, radice tuberoſâ. *Bindweed with variable leaves, foot-ſtalks with ſingle flowers, and a tuberous root.* Convolvulus radice tuberoſâ Cathartica. Houſt. MSS. *The true Jalap.*

The firſt ſort is very common upon dry banks, and in gravelly grounds, in moſt parts of England, and is generally a ſign of gravel lying under the ſurface. The roots of this ſhoot very deep into the ground, from whence ſome country people call it Devils Guts.

From the root ariſes many weak ſtalks, which trail on the ground, and faſten themſelves about the neighbouring plants; theſe are garniſhed with triangular arrow-pointed leaves. The flowers are produced from the ſide of the branches, having long foot-ſtalks, each ſuſtaining a ſingle flower, which is ſometimes white, at other times red, and frequently is variegated. This is a troubleſome weed in gardens, ſo ſhould be conſtantly rooted out.

The ſecond ſort is alſo a troubleſome weed in gardens, when the roots are intermixed with thoſe of trees and ſhrubs, or under hedges, where the plants cannot be eaſily deſtroyed; but in an open clear ſpot of ground, where the plants are carefully hoed down for three or four months, they may be effectually deſtroyed; for when the ſtalks are broken or cut, a milky juice flows out, and thereby the roots are ſoon exhauſted and decay. The roots of this ſort are pretty thick, extend far on every ſide, and are white. The ſtalks riſe ten or twelve feet high, twining themſelves about trees or hedges, and are garniſhed with large arrow-pointed leaves, which are torn at their baſe. The flowers come out from the ſide of the branches upon long foot-ſtalks, each ſuſtaining one large white flower, which are ſucceeded by roundiſh ſeed-veſſels, having three cells filled with ſeeds, which are convex on one ſide and plain on the other. It flowers in June, and the ſeeds ripen in autumn, ſoon after which the ſtalks decay to the root; but as every ſmall piece of the root will grow, it renders this a troubleſome weed to deſtroy.

The third ſort grows naturally in Syria, where the roots of the plants are wounded, and ſhells placed under the wounds to receive the milky juice which flows out, which is inſpiſſated, and afterward put up and exported: this is what is called Scammony in the ſhops; it is a very hardy plant, and will thrive very well in the open air in England, provided it is on a dry ſoil. The roots of this are thick, run deep into the ground, and are covered with a dark bark. The branches extend themſelves on every ſide to the diſtance of four or five feet; theſe are ſlender, and trail on the ground, if they are not ſupported, and are garniſhed with narrow arrow-pointed leaves. The flowers are of a pale yellow, and come out from the ſide of the branches, two ſitting upon each long foot-ſtalk; theſe are ſucceeded by roundiſh ſeed-veſſels, having three cells, filled with ſeeds ſhaped like thoſe of the former ſort, but ſmaller. It flowers in June and July, and the ſeeds ripen in autumn. If the ſeeds of this ſort are ſown in the ſpring, on a border of light earth, the plants will come up, and require no other culture but to keep them clean from weeds, and thin the plants where they grow too cloſe; for as the branches extend pretty far, the plants ſhould not be nearer than three feet aſunder. The ſtalks decay in autumn, but the roots will abide many years.

The fourth ſort is an annual plant, which grows naturally in Aſia and America, but has been long cultivated for ornament in the Engliſh gardens, and is generally known by the title of Convolvulus major. Of this there are three or four laſting varieties; the moſt common hath a purple flower; but there is one with a white, another with a red, and one with a whitiſh blue flower, which hath white ſeeds. All theſe varieties I have cultivated many years, without obſerving either of them change. If the ſeeds of theſe ſorts are ſown in the ſpring, upon a warm border where the plants are deſigned to remain, they will require no other culture but to keep them clean from weeds; and place ſome tall ſtakes down by them, for their ſtalks to twine about, otherwiſe they will ſpread on the ground, and make a bad appearance. Theſe plants, if they are properly ſupported, will riſe ten or twelve feet high; they flower in June, July, and Auguſt, and will continue till the froſt kills them. Their ſeeds ripen in autumn.

The fifth ſort grows naturally in Jamaica, from whence the late Dr. Houſtoun ſent me the ſeeds; this ſends out long branches, which twiſt about the

trees, and riſe to a great height; the leaves are ſmooth, heart-ſhaped, ending in long points, and the ears at the baſe are large and rounded, ſtanding upon long ſlender foot-ſtalks. The flowers come out on the oppoſite ſide of the ſtalks, upon long foot-ſtalks, each ſuſtaining three flowers, with longer tubes than thoſe of the former, and are of a deeper purple colour; this flowers from the latter end of June till the froſt deſtroys it. As this is not ſo hardy as the former, the ſeeds ſhould be ſown upon a hot-bed in the ſpring, to bring the plants forward; and toward the end of May, they ſhould be planted out in warm borders, and treated in the ſame manner as the former ſort.

The ſixth ſort grows naturally in Africa and America; this is an annual plant, which riſes with a twining ſtalk eight or ten feet high, garniſhed with heart-ſhaped leaves, divided into three lobes, which end in ſharp points; theſe are woolly, and ſtand upon long foot-ſtalks; the flowers come out on long foot-ſtalks, each ſuſtaining two flowers of a very deep blue colour, from whence it has been titled Anil or Indigo. This is one of the moſt beautiful flowers of this genus, and is undoubtedly a diſtinct ſpecies; though ſome have ſuppoſed it to be only a variety of the fourth ſort, for I have cultivated it many years, and have never found it alter; the leaves of this having three deeply divided lobes, and thoſe of the fourth ſort being entire, is ſufficient to determine the ſpecific difference; this ſort is annual, and muſt be propagated in the ſame manner as the fifth. It flowers all the latter part of ſummer, and, in good ſeaſons, the ſeeds ripen well in the open air.

The ſeventh ſort is that whoſe roots are eaten, and is generally titled Spaniſh Potatoe; theſe roots are annually imported from Spain and Portugal, where they are greatly cultivated for the table, but they are too tender to thrive well in the open air in England; they are cultivated by the roots in the ſame way as the common Potatoe, but require much more room; for theſe ſend out many trailing ſtalks, which extend four or five feet every way, and at their joints ſend out roots, which, in warm countries, grow to be large tubers, ſo that from a ſingle root planted, forty or fifty large roots are produced. This plant is ſometimes propagated by way of curioſity in England, but the roots ſhould be planted on a hot-bed in the ſpring; and if the plants are kept covered in bad weather with glaſſes, they will produce flowers, and many ſmall roots will be produced from the joints; but if they are expoſed to the open air, they ſeldom make much progreſs.

The eighth ſort grows naturally at La Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun. This riſes with a ſtrong winding ſtalk to the height of twenty feet, dividing into ſeveral ſmaller, which faſten themſelves about any of the neighbouring trees and ſhrubs; theſe are garniſhed with leaves in ſhape of a hand, having ſeven lobes, which are ſpear-ſhaped, and deeply cut on their borders, ending in ſharp points. The flowers are ſingle on each foot-ſtalk, which are very long. The empalement of the flower is large, ſpreading open, and is divided deeply into five parts. The flowers are large, of a purple colour, and are ſucceeded by large roundiſh ſeed-veſſels, having three cells, in each of theſe is lodged a ſingle ſeed.

This plant is tender, ſo the ſeeds ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they muſt be tranſplanted each into a ſeparate pot filled with light earth, and plunged into a moderate hot-bed, obſerving to ſhade them from the ſun till they have taken new root; then they ſhould have a large ſhare of air admitted to them every day, to prevent their drawing weak, and alſo ſhould have moderate waterings three or four times a week. When the plants are grown too tall to remain in the hot-bed, they muſt be ſhifted into larger pots, and placed in the bark-ſtove, where, if they are allowed room, they will riſe to a great height, and produce flowers, but it rarely produces ſeeds in England.

The ninth ſort is an annual plant. The ſeeds of this were ſent me from Carthagena in New Spain, where the plant grows naturally. This riſes with a twining ſlender ſtalk ten feet high, which is garniſhed with arrow-pointed leaves, whoſe ears at the baſe are rounded. The flowers are produced in ſmall cluſters, ſtanding on long foot-ſtalks; theſe are yellow, and are ſucceeded by three-cornered ſeed-veſſels, having three cells, in each of theſe are lodged two ſeeds.

This plant is annual, and too tender to thrive in the open air in England; ſo the ſeeds ſhould be ſown on a hot-bed in the ſpring, and the plants may be afterward treated in the ſame way as the eighth ſort, with which management they will flower and produce ripe ſeeds.

The ſeeds of the tenth ſort were ſent me from Jamaica by the late Dr. Houſtoun, who found the plants growing naturally there in great plenty. This is an annual plant, riſing with ſlender, ſtiff, twining ſtalks, eight or nine feet high, garniſhed with heart-ſhaped leaves, which are downy. The flowers ſtand many together at the end of ſtrong foot-ſtalks; theſe are purple, and are ſucceeded by roundiſh ſeed-veſſels, with three cells, containing ſeveral ſmall ſeeds.

This ſort requires the ſame treatment as the eighth, being too tender to thrive in this country in the open air.

The eleventh ſort was ſent me from the iſland of Barbuda. This is an annual plant, which riſes with twining ſtalks ſeven or eight feet high, garniſhed with oblong, oval, ſmooth leaves. The flowers come out at every joint on ſlender long foot-ſtalks, each ſupporting a large purple flower, whoſe empalement is cut almoſt to the bottom, in ten parts. The ſeeds and capſule are like thoſe of the other ſpecies. This is a tender plant, ſo muſt be treated in the ſame manner as the eighth ſort.

The twelfth ſort grows naturally at Carthagena in New Spain, from whence I received the ſeeds. This is a perennial plant, which riſes with ſtrong winding ſtalks to the height of twelve or fourteen feet, and are garniſhed with leaves, divided into five lobes, ſtanding upon ſhort foot-ſtalks; the flowers ſtand upon long foot-ſtalks, each ſuſtaining two purple flowers. The ſtalks, leaves, and every part of the plant, is cloſely covered with pungent ſtinging hairs, of a light brown colour. This ſort is tender, ſo muſt be treated in the ſame way as the eighth.

The thirteenth ſort grows naturally about Tolu in New Spain, from whence the ſeeds were ſent me by the late Mr. Robert Millar. This hath a ligneous ſtalk covered with a purple bark, which twines about the trees, and riſes to the height of thirty feet or more, and is garniſhed with leaves, which are deeply divided into five ſharp-pointed lobes. The flowers ſtand upon long thick foot-ſtalks, which have a knee in the middle; they are very large, and of a purple colour; theſe are ſucceeded by round ſeed-veſſels, as large as a middling Apple, divided into three cells, each containing two very large ſmooth ſeeds.

This plant is too tender to thrive in the open air in England, ſo muſt be treated in the ſame manner as the eighth ſort, but it grows too tall for the ſtoves here. I have had theſe plants upward of twenty feet high, which have ſent out many ſide branches, extending ſo wide on every ſide, as to cover moſt of the neighbouring plants, ſo that I was obliged to remove them into a cooler ſituation, where they would not thrive.

The fourteenth ſort grows naturally on the ſea ſhores in moſt of the iſlands in the Weſt-Indies, where the ſtalks trail on the ground, which are garniſhed with oval leaves, indented at the top. The flowers are large, of a purple colour, and are produced by threes, on very long foot-ſtalks; theſe are ſucceeded by large oval ſeed-veſſels, with three cells, each containing a ſingle ſeed. This hath a perennial ſtalk, which trails on the ground, and ſpreads to a great diſtance, but is too tender to thrive in the open air in England, ſo muſt be treated in the ſame manner as the eighth ſort,

and

and may be continued two or three years in a warm ſtove; but it is apt to ſpread too far for a ſmall ſtove, ſo that where there is not great room, it is not worthy of culture.

The fifteenth ſort grows naturally in Jamaica; this riſes with ſlender twining ſtalks eight or ten feet high; the leaves of theſe are ſhaped a little like thoſe of the common great white Convolvulus, but the foot-ſtalks, which are pretty long, do each ſuſtain many purple flowers, growing in bunches. The ſeed-veſſels of this ſort are three-cornered, and have three cells, each containing a ſingle ſeed. This is an annual plant, which requires a hot-bed to raiſe it, and muſt be kept in a glaſs-caſe or a ſtove, otherwiſe the ſeeds will not ripen here.

The ſixteenth ſort has been long preſerved in ſeveral curious gardens in England. It grows naturally in the Canary Iſlands; this hath a ſtrong fibrous root, from which ariſe ſeveral twining woody ſtalks, dividing into many ſmaller; theſe, where they have ſupport, will grow more than twenty feet high, and are garniſhed with oblong heart-ſhaped leaves, which are ſoft and hairy. The flowers are produced from the wings of the leaves, ſeveral ſtanding upon one foot-ſtalk; theſe are for the moſt part of a pale blue, but there is a variety of it with white flowers. This plant flowers in June, July, and Auguſt, and ſometimes ripens ſeeds here; but as the plants are eaſily propagated by layers, and alſo from cuttings, the ſeeds are not ſo much regarded; nor indeed will thoſe plants which are raiſed by layers or cuttings produce ſeeds, though thoſe which come from ſeeds ſeldom fail. As the leaves of this plant continue green all the year, the plants make a pretty variety in winter in the green-houſe; for it will not live abroad in winter in this country, though it only requires the ſame protection as Myrtles, and other hardy green-houſe plants. It may be propagated by laying down the young ſhoots in the ſpring, which generally put out roots in three or four months; then they may be taken from the old plants, and each planted in a ſeparate pot filled with light earth, and placed in the ſhade till they have taken new root; after which they may be placed with other hardy green-houſe plants till autumn, when they ſhould be removed into the green-houſe, and afterward treated in the ſame way as Myrtles, and other green-houſe plants. If the tender cuttings of this are planted during any of the ſummer months, in pots filled with light earth, and plunged into a moderate hot-bed, ſhading them from the ſun, they will take root, and afterward ſhould be treated as the layers.

The ſeventeenth ſort is an annual plant; the ſeeds of it were ſent me from Jamaica, where it grows naturally. This riſes with a very ſlender twining ſtalk four or five feet high, garniſhed with triangular leaves, which are pointed. The flowers grow in cluſters, ſitting cloſe to the ſtalks, which are blue, and are ſucceeded by ſeeds like thoſe of the fourth ſort. This ſort will not ripen ſeeds in England, unleſs the plants are brought forward on a hot-bed in the ſpring, and afterward placed in a glaſs-caſe, where they may be defended from cold.

The eighteenth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. Houſtoun. This is one of the moſt beautiful kinds, the flowers being very large, and of a fine Roſe colour. It riſes with a winding ſtalk ſeven or eight feet high, which is garniſhed with heart-ſhaped leaves, ending in long ſharp points, ſitting upon very long foot-ſtalks. The flowers alſo have long foot-ſtalks, each ſupporting two flowers, whoſe empalement is divided deeply into five parts; the ſeeds of this are large, and covered with a fine down. This is an annual plant, which is too tender to thrive in the open air in this country, ſo the ſeeds ſhould be ſown on a hot-bed in the ſpring, and the plants afterward treated in the ſame manner as is directed for the eighth ſort.

The nineteenth ſort grows naturally near the ſea at Campeachy, from whence I received the ſeeds. This hath ſtrong, ſmooth, winding ſtalks, which ſend out roots at their joints, and are garniſhed with arrow-pointed leaves, whoſe ears or lobes are obtuſe; the flowers are large, of a ſulphur colour, and ſit upon very long foot-ſtalks, which proceed from the ſide of the ſtalks, each ſupporting one flower, with a large ſwelling empalement; theſe are ſucceeded by large, ſmooth, oval capſules, having three cells, each including one large ſmooth ſeed. This is a perennial plant, whoſe ſtalks extend to a great diſtance, and put out roots at the joints, whereby it propagates in plenty; but it is too tender to thrive in England, unleſs it is preſerved in a warm ſtove, where it requires more room than can well be allowed to one plant. It muſt be treated in the ſame manner as the eighth ſort.

The twentieth ſort grows naturally in Africa, from whence the ſeeds were ſent to the royal garden at Paris, and from thence I received it in 1730. This riſes with a ſlender winding ſtalk five or ſix feet high, garniſhed with heart-ſhaped arrow-pointed leaves; the flowers ſtand on long ſlender foot-ſtalks; theſe are white, with purple bottoms. This ſort may be treated in the ſame manner as the common great Convolvulus.

The twenty-firſt ſort grows naturally in Spain and Italy. This is an annual plant, which riſes about two feet high, with ſlender twining ſtalks, garniſhed with oval leaves. The flowers are ſmall, and of a bluiſh colour, each foot-ſtalk ſupporting one flower of little beauty, ſo is not often cultivated in gardens. If the ſeeds of this ſort are permitted to ſcatter, the plants will riſe in the ſpring, and require no other culture but to keep them clean from weeds; or if the ſeeds are ſown in the ſpring, where the plants are to remain, they will flower in June, and the ſeeds will ripen in Auguſt.

The twenty-ſecond ſort grows naturally in Sicily, and alſo in the iſlands of the Archipelago. This hath a perennial root, which ſends out many ſlender ſtiff ſtalks, twiſting themſelves round the neighbouring plants, and riſe five or ſix feet high; theſe are garniſhed with leaves, which are divided into five or ſeven narrow lobes, and are of a ſoft texture, like ſattin, ſtanding on ſhort foot-ſtalks. The flowers are produced from the ſide of the ſtalks upon long foot-ſtalks, which ſuſtain two flowers of a pale Roſe colour, with five ſtripes of a deeper red. This ſort creeps at the root, ſo ſeldom produces ſeeds in England, but is propagated by ſhoots taken from the old plants. The beſt time for parting and tranſplanting theſe plants, is about the beginning of May, when they may be taken out of the green-houſe, and expoſed in the open air; but the young plants which are ſeparated from the old ones, ſhould be placed under a frame, and ſhaded from the ſun till they have taken new root; after which they muſt be gradually hardened to bear the open air, to which they muſt be expoſed all the ſummer; but in autumn they muſt be placed in the green-houſe, and may be treated in the ſame way as the Canary Convolvulus beforementioned.

The twenty-third ſort hath ſome appearance of the twenty-ſecond, and hath been ſuppoſed to be the ſame ſpecies by ſome writers; but I have cultivated both many years, and never have found either of them alter, ſo that I make no doubt of their being diſtinct plants. This ſort hath a perennial root like the former, which ſends out many weak twining ſtalks, riſing about three feet high, twiſting about the plants which ſtand near it, or about each other, and if they have no other ſupport, fall to the ground; theſe are garniſhed with leaves of different forms, ſome are ſhaped almoſt like thoſe of Betony, being ſlightly cut on their edges, others are almoſt heart-ſhaped, and are deeply cut on the ſides, and ſome are cut to the midrib; they have a ſhining appearance like ſattin, and are ſoft to the touch, ſtanding on ſhort foot-ſtalks. The flowers are produced on the oppoſite ſide from the leaves, having very long foot-ſtalks, each ſuſtaining two flowers of a pale Roſe colour, very like thoſe of

of the former ſpecies. It flowers in June, July, and Auguſt, but rarely ripens ſeeds in England. It hath a perennial root, which ſends out offſets, by which it is propagated in England, in the ſame manner as the laſt mentioned, and the plants muſt be treated in the ſame way.

The twenty-fourth ſort grows naturally in Portugal, but hath been long cultivated in the flower-gardens in England for ornament; this is uſually titled Convolvulus Minor, by the ſeedſmen and gardeners. It is an annual plant, which hath ſeveral thick herbaceous ſtalks, growing about two feet long, which do not twine like the other ſorts, but decline toward the ground, upon which many of the lower branches lie proſtrate; theſe are garniſhed with ſpear-ſhaped leaves, which ſit cloſe to the branches; the foot-ſtalks of the flowers come out juſt above the leaves at the ſame joint, and on the ſame ſide of the ſtalks; theſe are about two inches long, each ſuſtaining one large open bell-ſhaped flower, which in ſome is of a fine blue colour, with a white bottom; in others they are pure white, and ſome are beautifully variegated with both colours. The white flowers are ſucceeded by white ſeeds, and the blue by dark-coloured ſeeds, and this difference is pretty conſtant in both; but thoſe plants with variegated flowers, have frequently plain flowers of both colours intermixed with the ſtriped; therefore the only method to continue the variegated ſort, is to pull off all the plain flowers when they appear, never ſuffering any of them to remain for ſeed.

This ſort is propagated by ſeeds, which ſhould be ſown on the borders of the flower-garden where they are deſigned to remain. The uſual method is to put two or three ſeeds in each place where they are intended to flower, covering them half an inch with earth; and when the plants come up, if the ſeeds all grow, there ſhould be but two left in each place, which will be ſufficient; the others ſhould be drawn out carefully, ſo as not to diſturb the roots of thoſe which are left; after which they will require no other culture but to keep them clean from weeds. If the ſeeds are ſown in autumn, the plants will flower in May; but thoſe which are ſown in the ſpring, will not flower till about the middle of June, and will continue flowering till the froſt ſtops them. The ſeeds ripen in Auguſt and September.

The twenty-fifth ſort grows naturally in Italy and Sicily. This hath a perennial root, which runs deep in the ground, from which ariſe two or three upright branching ſtalks near two or three feet high, garniſhed with narrow leaves about two inches long, which ſit cloſe to the ſtalks; the foot-ſtalks of the flower proceed from the ſame place; theſe are four or five inches long, each ſuſtaining four or five flowers, of a pale Roſe colour, which ſpread open almoſt flat. This flowers in June and July, but ſeldom produces good ſeeds in England. It is propagated by ſeeds, which muſt be obtained from the countries where it naturally grows; theſe ſhould be ſown upon a warm dry border, where they are deſigned to remain; for as the plants run down with long tap-roots, they will not bear tranſplanting, for I have often made trial of this without any ſucceſs. When the plants come up, they ſhould be thinned where they grow too cloſe, and afterward conſtantly kept clean from weeds, which is all the culture it will require. It flowers in July and Auguſt, and the ſtalks decay in autumn; but the roots will laſt ſeveral years, and if they are in a dry ſoil and warm ſituation, will abide through the winters very well without covering. I have received a variety of this from Nice, where it grows naturally, with broader leaves, which are hairy. The flowers are placed all toward the top of the ſtalk upon long foot-ſtalks, growing many together very cloſely joined: but I cannot be ſure if it is not a ſeminal variation, for it was ſent me by the ſame title.

The twenty-ſixth ſort grows naturally in France; this hath a perennial creeping root, from which ariſe ſeveral ſhort branching ſtalks about four inches high, garniſhed with ſpear-ſhaped ſilky leaves; the flowers are produced on the ſide, and at the top of the ſtalks, in ſmall cluſters, ſitting cloſe together; theſe are much ſmaller than thoſe of the former ſort, but are of a deeper Roſe colour: this ſeldom produces ſeeds in England, but the roots propagate in plenty. It delights in a light dry ſoil, and requires no other care but to keep the plants clean from weeds; it may be tranſplanted either in the ſpring or autumn. This is by ſome ſuppoſed to be the ſame as the laſt mentioned ſort, but whoever has cultivated them, can have no doubt of their being different ſpecies.

The twenty-ſeventh ſort grows naturally in Italy, Sicily, and the iſlands in the Archipelago. It riſes with upright ſhrubby ſtalks about three feet high, cloſely garniſhed with blunt, ſpear-ſhaped, ſilky leaves, which are placed on every ſide the ſtalks; they are near two inches long, and a quarter broad, rounding at their ends. The flowers are produced in cluſters at the top of the ſtalks, ſitting very cloſe; they are of a pale Roſe colour, and come out in June and July, but do not perfect ſeeds in England. This plant will live in the open air in mild winters, if it is planted in a light ſoil and a warm ſituation, but in hard winters it is deſtroyed; therefore ſome of the plants ſhould be kept in pots, and ſheltered under a common frame in winter, where it may enjoy the free air in mild weather, and be protected from the froſt, and in ſummer placed abroad with other hardy exotic plants, where its fine ſilky leaves will make a pretty appearance. It may be propagated by laying down the branches, and alſo by cuttings, but both very ſeldom put out roots the ſame year, and many of them will fail; ſo that the beſt way is to procure the ſeeds from Italy, for thoſe plants which come from ſeeds, grow much larger than thoſe which are propagated the other way.

The twenty-eighth ſort grows naturally in Candia, and ſeveral of the iſlands in the Archipelago. This hath a perennial root, which ſends up ſeveral erect branching ſtalks about two feet high, which are garniſhed with very narrow-pointed leaves, ſitting cloſe to the ſtalks, which are hoary. The flowers come out ſingly on the ſide of the ſtalks, ſitting very cloſe to them, having ſcarce any foot-ſtalks; theſe are of a very pale bluiſh colour, and ſpread open almoſt to the bottom. It flowers in June and July, but rarely produces any ſeeds in England.

This ſort is propagated in the ſame manner as the twenty-fifth, and the plants require the ſame treatment. This plant muſt have a dry ſoil and a warm ſituation, otherwiſe it will not live through the winter in the open air in England. As the ſtalks of this ſort decay in autumn, ſo if the ſurface of the ground about their roots is covered with ſome old tanners bark, it will preſerve them in the hardeſt froſts.

The twenty-ninth ſort is uſed in medicine. This is ſtiled Soldanella, and Braſſica marina; it grows naturally on the ſea beaches in many parts of England, but cannot be long preſerved in a garden. This hath many ſmall, white, ſtringy roots, which ſpread wide, and ſend out ſeveral weak trailing branches, which twine about the neighbouring plants like the common Bindweed, and are garniſhed with kidney-ſhaped leaves about the ſize of thoſe of the leſſer Celandine, ſtanding upon long foot-ſtalks, and are placed alternate. The flowers are produced on the ſide of the branches at each joint. Theſe are ſhaped like thoſe of the firſt ſort, and are of a reddiſh purple colour; they appear in July, and are ſucceeded by round capſules, having three cells, each containing one black ſeed; every part of the plant abounds with a milky juice. This is eſteemed a good medicine to purge off watery humours, and is preſcribed in dropſies.

The thirtieth ſort grows naturally in the iſland of Ceylon. This is a perennial plant, having thick fleſhy roots, which ſpread far in the ground, and abound with a milky juice, which flows out when the roots are broken or wounded, and ſoon hardens into a reſinous ſubſtance, when expoſed to the ſun and air. From the root ſhoots forth many twining branches,

which twiſt about each other, or the neighbouring plants, like the common Bindweed. Theſe are garniſhed with heart-ſhaped leaves, which are ſoft to the touch, like thoſe of the Marſh Mallow. The flowers are produced at the joints on the ſide of the ſtalks, ſeveral ſtanding together on the ſame foot-ſtalk; they are white, and ſhaped like thoſe of the common great Bindweed. Theſe are ſucceeded by round capſules, having three cells, which contain two ſeeds in each.

The roots of this plant, which is the only part uſed in medicine, are brought to us from India. It is titled Turpethum, or Turbith in the ſhops.

This plant is tender, ſo will not live in the open air in England; it is propagated by ſeeds, which muſt be ſown on a hot-bed; and when the plants are fit to remove, they ſhould be each planted in a ſeparate pot, and plunged into a hot-bed of tanners bark, and ſcreened from the ſun till they have taken freſh root, and afterward muſt be treated in the ſame manner as hath been directed for the eighth ſort.

The thirty-firſt ſort is the Jalap which is uſed in medicine. This grows naturally at Haleppo, in the Spaniſh Weſt-Indies, ſituated between La Vera Cruz and Mexico. The root of this plant hath been long uſed in medicine, but it was not certainly known, what plant it was produced from. The old title of this was Mechoacana nigra, but father Plumier aſſerted that it was the root of one ſpecies of Marvel of Peru; from whence Tournefort was induced to conſtitute a genus from that plant, under the title of Jalapa. But Mr. Ray, from better information, put it among the Convolvuli, and titled it Convolvulus Americanus, Jalapium dictus. This was by the late Dr. Houſtoun certainly aſcertained, who brought ſome of the roots of this plant from the Spaniſh Weſt-Indies to Jamaica, where he planted them, with a deſign of cultivating the plants in that iſland, where he obſerved them to thrive, during his abode there: but ſoon after he left the country, the perſon to whoſe care he committed them, was ſo careleſs as to ſuffer hogs to root them out of the ground, and deſtroy them; ſo that there was no remains of them left, when he returned there; nor have I heard of this plant being introduced into any of the Britiſh iſlands ſince.

A few years paſt I received a few of the ſeeds of this plant, which ſucceeded in the Chelſea garden, where the plants throve very well, but did not produce any flowers. This hath a large root of an oval form, which is full of a milky juice; from which come out many herbaceous triangular twining ſtalks, riſing eight or ten feet, garniſhed with variable leaves, ſome of them being heart-ſhaped, others angular, and ſome oblong and pointed. They are ſmooth, and ſtand upon long foot-ſtalks; and from a drawing of the plant, made by a Spaniard in the country, where it grows naturally, who gave it to Dr. Houſton, and is now in my poſſeſſion, the flowers are ſhaped like thoſe of the common Great Bindweed, each foot-ſtalk ſupporting one flower. But as it is only a pencil drawing, ſo the colour is not expreſſed, therefore I can give no farther account of it. The ſeeds of this are covered with very white down like cotton.

As this plant is a native of a warm country, ſo it will not thrive in England, unleſs it is preſerved in a warm ſtove; therefore the ſeeds muſt be ſown on a hot-bed, and the plants put into pots, and plunged into a hot-bed of tanners bark, and treated in the ſame manner as the eighth ſort; with this difference only, that as this hath large, fleſhy, ſucculent roots, ſo they ſhould have but little water given them, eſpecially in winter, leſt it cauſe them to rot. They ſhould be planted in light ſandy earth not too rich, for the ſame reaſon, and the plants ſhould always remain in the bark-ſtove.

The root of Jalap is eſteemed an excellent cathartic medicine, purging ſerous watery humours eſpecially, and is of ſingular ſervice in dropſies, and for rheumatic diſorders. But the quantity of the root which is uſed in medicine, is not ſufficient to render the introduction of this plant into the Britiſh colonies, a matter of great concern. But ſince the diſtillers and brewers have found out its uſe for exciting a fermentation, the conſumption of it is now ſo great, as that it would become a national benefit, if it were produced in the Britiſh iſlands; which might be ſoon effected, were the inhabitants of thoſe iſlands a little more attentive to their own, and the public benefit.

CONYZA. Lin. Gen. Plant. 854. Tourn. Inſt. R. H. 454. tab. 259. [of Κώνωψ, *Gr.* becauſe the leaves, being hung up, drive away gnats and fleas, as Dioſcorides ſays:] Flea-bane.

The CHARACTERS are,

It hath a compound flower, made up of many hermaphrodite florets, which compoſe the diſk; and female half florets, which are ranged round the border, and form the rays; the hermaphrodite florets are funnel-ſhaped, and cut into five parts at the brim, which ſpread open; theſe have each five ſhort hairy ſtamina, terminated by cylindrical ſummits; in the bottom of each floret is ſituated a germen ſupporting a ſlender ſtyle, crowned by a bifid ſtigma. The female half florets or rays, are funnel-ſhaped, and cut into three parts at the top; theſe have a germen, with a ſlender ſtyle, terminated by two ſlender ſtigmas, but have no ſtamina: All theſe are included in a common ſcaly empalement, which is oblong and ſquare; the ſcales are pointed, and the outer ones ſpread open. The hermaphrodite and female florets, are each ſucceeded by one oblong ſeed, crowned with down, ſitting upon a plain receptacle, and are included in the empalement.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua. The plants of this ſection have hermaphrodite and female florets, which are both fruitful.

The SPECIES are,

1. CONYZA (*Squarroſa*) foliis lanceolatis acutis, caule annuo corymboſo. Hort. Cliff. 405. *Flea-bane with pointed ſpear-ſhaped leaves, an annual ſtalk, and flowers growing in roundiſh bunches.* Conyza major vulgaris. C. B. P. 265. *Common greater Flea-bane.*
2. CONYZA (*Bifrons*) foliis ovato oblongis, amplexicaulibus. Hort. Cliff. 405. *Flea-bane with oblong oval leaves embracing the ſtalks.* Eupatoria Conyzoides maxima Canadenſis, foliis caulem amplexantibus. Pluk. Alm. 141.
3. CONYZA (*Candidis*) foliis ovatis tomentoſis, floribus confertis, pedunculis lateralibus terminalibuſque. Hort. Cliff. 405. *Flea-bane with oval woolly leaves, flowers growing in cluſters, and foot-ſtalks proceeding from the ſides and terminating the ſtalks.* Conyza Cretica fruticoſa, folio molli candidiſſimo & tomentoſo. Tourn. Cor. 33.
4. CONYZA (*Lobata*) foliis inferioribus trifidis, ſuperioribus ovato lanceolatis obſolete ſerratis floribus corymboſis. Hort. Cliff. 405. *Flea-bane whoſe under leaves are trifid, thoſe above oval and ſpear-ſhaped, and flowers growing in round bunches.* Conyza arboreſcens lutea, folio trifido. Plum. Cat. 9.
5. CONYZA (*Tomentoſis*) arboreſcens, foliis oblongo ovatis, tomentoſis, ſubtus cinereis, floribus terminalibus pedunculis racemoſis. *Tree Flea-bane with oblong woolly leaves, of an Aſh colour on their under ſide, and flowers terminating the branches, ſtanding upon branching foot-ſtalks.* Conyza arboreſcens, tomentoſa, foliis oblongis, floribus in ſummitatibus racemorum, ramoſis ſparſis albicantibus. Houſt. MSS.
6. CONYZA (*Salicifolius*) foliis linearibus decurrentibus ſerratis, floribus corymboſis terminalibus. *Flea-bane with narrow running leaves, and flowers in round bunches terminating the ſtalks.* Conyza herbacea, caule alato, Salicis folio, floribus umbellatis purpureis minoribus. Houſt. MSS.
7. CONYZA (*Corymboſa*) arboreſcens, foliis lanceolatis, floribus corymboſis, terminalibus pedunculis racemoſis. *Tree Flea-bane with ſpear-ſhaped leaves, and flowers growing in round bunches at the end of the ſhoots, having branching foot-ſtalks.* Conyza arboreſcens, foliis oblongis floribus ſingulis tribus floſculis conſtantibus. Houſt. MSS.

8. Conyza (*Viſcoſa*) caule herbaceo, foliis ovatis ſerratis, villoſis, floribus alaribus & terminalibus. *Fleabane with an herbaceous ſtalk, oval, ſawed, hairy leaves, and flowers proceeding from the ſides, and at the ends of the branches.* Conyza odorata, Bellidis folio villoſa & viſcoſa. Houſt. MSS.

9. Conyza (*Arboreſcens*) foliis ovatis integerrimis acutis ſubtus tomentoſis, ſpicis recurvatis ſecundis, bracteis reflexis. Lin. Sp. 1209. *Flea-bane with entire oval-pointed leaves, woolly on their under ſide, recurved abounding ſpikes of flowers, and reflexed bractea.* Conyza fruticoſa, flore pallide purpureo, capitulis & lateribus ramulorum ſpicatum exeuntibus. Sloan. Cat. Jam. 124.

10. Conyza (*Symphytifolia*) foliis oblongo ovatis ſcabris, floribus racemoſis terminalibus, caule herbaceo. *Fleabane with oblong, oval, rough leaves, flowers growing in bunches at the ends of the branches, and an herbaceous ſtalk.* Conyza Symphyti facie, flore luteo. Houſt. MSS.

11. Conyza (*Scandens*) foliis lanceolatis ſcabris, nervoſis ſeſſilibus, racemis recurvatis, floribus adſcendentibus, pedunculis lateralibus caule fruticoſo ſcandente. *Fleabane with rough, nervous, ſpear-ſhaped leaves ſitting cloſe to the branches, recurved ſpikes, with flowers ſtanding upward, foot-ſtalks proceeding from the ſide of the branches, and climbing ſhrubby ſtalks.* Conyza Americana ſcandens, Lauri folio aſpero, floribus ſpicatis albis. Houſt. MSS.

12. Conyza (*Trinerviis*) foliis ovatis glabris, trinerviis integerrimis, floribus ſpicatis terminalibus, caule fruticoſo. *Flea-bane with oval ſmooth leaves, which have three veins and are entire, flowers growing in ſpikes at the ends of the branches, and a ſhrubby ſtalk.* Conyza Americana fruteſcens, foliis ovatis trinerviis & integris, floribus ſpicatis albis. Houſt. MSS.

13. Conyza (*Uniflora*) foliis lanceolatis acutis ſeſſilibus, floribus ſingulis lateralibus, calycibus coloratis, caule fruticoſo ramoſo. *Flea-bane with pointed ſpear-ſhaped leaves ſitting cloſe to the branches, ſingle flowers on the ſide of the branches, which have coloured empalements, and a ſhrubby branching ſtalk.* Conyza Americana fruteſcens foliis oblongis acutis, capitulis & ramulorum exeuntibus, calycibus purpuraſcentibus. Houſt. MSS.

14. Conyza (*Spicata*) fruticoſa foliis ovatis trinerviis, floribus ſpicatis alaribus. *Shrubby Flea-bane with oval leaves having three nerves, and flowers growing in ſpikes from the ſide of the branches.*

15. Conyza (*Pedunculata*) foliis ovato lanceolatis trinerviis, pedunculis longiſſimis terminalibus floribus corymboſis. *Flea-bane with oval ſpear-ſhaped leaves having three veins, foot-ſtalks which are very long terminating the branches, and flowers growing in round bunches.*

16. Conyza (*Baccharis*) foliis ovato oblongis, obtuſis ſerratis, ſemiamplexicaulibus, floribus corymboſis terminalibus. *Flea-bane with oblong oval leaves which are obtuſe and ſawed, half embracing the ſtalks with their baſe, and flowers in round bunches terminating the ſtalks.* Eupatorium Conyzoides Sinica Baccharidis folio rarius crenato, ſummo caule ramoſo, floribus parvis coronato. Pluk. Amath. 80.

17. Conyza (*Odorata*) foliis lanceolatis ſerratis, petiolatis, caule fruticoſo ramoſo, floribus corymboſis terminalibus. *Flea-bane with ſpear-ſhaped ſawed leaves having foot-ſtalks, and flowers growing in round bunches at the end of the branches.* Conyza major odorato ſive Baccharis floribus purpureis nudis. Sloan. Cat. Jam. 121.

18. Conyza (*Hirſuta*) foliis ovalibus integerrimis ſcabris ſubtus hirſutis. Lin. Sp. 1209. *Flea-bane with oval, entire, rough leaves, hairy on their under ſide.*

The firſt ſort grows naturally upon dry places in ſeveral parts of England, ſo is ſeldom allowed a p' ; in gardens. This is a biennial plant, which decays ſoon after the ſeeds are ripe; it hath ſeveral large, oblong, pointed leaves, growing near the ground, which are hairy; between theſe the ſtalks come out, which riſe two feet and a half high, dividing upward into ſeveral branches, garniſhed with ſmaller oblong leaves,

ſtanding alternate; at the ends of the ſtalks the flowers are produced in round bunches, which are of a dirty yellow colour; theſe are ſucceeded by oblong ſeeds, crowned with down. It flowers in July, and the ſeeds ripen in autumn. If the ſeeds are permitted to ſcatter, the plants will come up the following ſpring, and require no other care but to keep them clean from weeds.

The ſecond ſort grows naturally on the mountains in Italy, and is preſerved in botanic gardens for the ſake of variety. This hath a biennial root but an annual ſtalk. From a thick fibrous root ariſe many upright ſtalks, garniſhed with oblong oval leaves, which are rough, and embrace the ſtalks with their baſe; theſe have appendages running along the ſtalk, from one to the other, whereby the ſtalk is winged. The upper part of the ſtalks divide into many ſmaller branches, garniſhed with leaves of the ſame form as the other, but ſmaller, ſtanding alternate; the branches and main ſtalks, are terminated by yellow flowers growing in round bunches; theſe are ſucceeded by oblong ſeeds, crowned with down. It flowers in July, and the ſeeds ripen in autumn. This is propagated by ſeeds, which may be ſown on a bed of light earth in the ſpring, and when the plants come up, they ſhould be thinned where they are too near, and kept clean from weeds; the following autumn they may be tranſplanted where they are deſigned to remain, and require no other care but to keep them clean from weeds. The ſecond year they will flower and produce ripe ſeeds, and will continue two years if the ſoil is not too good, for theſe plants often rot, when they are planted in a rich ſoil.

The third ſort grows naturally in Crete. This hath a ſhort ſhrubby ſtalk, which in this country ſeldom riſes more than ſix inches high, dividing into ſeveral ſhort branches, which are cloſely garniſhed with oval, woolly, very white leaves; from theſe branches ariſe the flower-ſtalks, which are woolly, about nine inches high, garniſhed with ſmall, oval, white leaves, placed alternate. The flowers are produced at the ſides, and end of the ſtalk, ſometimes but one, at other times two, and ſometimes three flowers ſtanding on the ſame foot-ſtalk. They are of a dirty yellow colour, and appear in July, but rarely are ſucceeded by ſeeds in this country; ſo the plant is propagated here by ſlips, which, if taken from the old plants in June, and planted on an eaſt-aſpected border, and covered with hand-glaſſes, will take root in ſix or eight weeks. But theſe ſlips muſt be frequently, but gently refreſhed with water, and the glaſſes ſhould be ſhaded in hot weather; and after they have been planted a fortnight, the glaſſes ſhould be raiſed on one ſide to admit air to the cuttings; and when they have taken root, they ſhould be gradually expoſed to the open air. In autumn theſe ſhould be carefully taken up, preſerving the earth to their roots; ſome of them may be planted in pots, that they may be ſheltered under a frame in the winter; and the others ſhould be planted in a warm border of dry poor earth, where they will endure the cold of our ordinary winters very well, and continue many years. This is preſerved in gardens, more for the beauty of its ſilvery leaves than its flowers, which have not much to recommend them.

The fourth ſort grows naturally in Jamaica, from whence it was ſent me by the late Dr. Houſtoun. This is titled by Sir Hans Sloane Virga aurea major, ſc. Herba Doria folio ſinuato hirſuto. Cat. Jam. 125. It riſes with a ſhrubby ſtalk ſeven or eight feet high, dividing into ſeveral branches, garniſhed with rough leaves four inches long, ſhaped like the point of a halbert. The flowers are produced in roundiſh bunches, at the extremity of the branches; they are yellow, and ſtand cloſe together. Theſe are ſucceeded by oblong ſeeds crowned with down.

This plant is too tender to thrive in the open air in this country, therefore the ſeeds muſt be ſown upon a hot-bed; and when the plants are fit to remove, they muſt be each tranſplanted into a ſeparate ſmall

pot filled with light ſandy earth, and plunged into a hot-bed, obſerving to ſcreen them from the ſun till they have taken new root; then they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently watered in warm weather, but they ſhould not have it in too great plenty. As the plants advance in ſtrength, ſo they muſt have a greater ſhare of air; and if the ſeaſon is warm, they may be expoſed to the open air for a few weeks in the heat of ſummer, provided they are placed in a warm ſituation; but if the nights prove cold, or much wet ſhould fall, they muſt be removed into ſhelter: if theſe plants are placed in a moderate ſtove in winter, they will thrive better than in greater heat, and in ſummer they ſhould have a large ſhare of air. With this management I have had the plants flower well in July, though they have not perfected ſeeds here.

The fifth ſort riſes with a woody ſtalk ten or twelve feet high, dividing into many branches, whoſe bark is covered with a brown down; theſe are garniſhed with oblong oval leaves, which are green on their upper ſide, but of an Aſh colour on their under, placed alternate, on ſhort foot-ſtalks. The flowers are produced at the end of the branches, upon long branching foot-ſtalks, in looſe ſpikes ranged on one ſide; they are white, and are ſucceeded by long flat ſeeds crowned with down. This plant grows naturally at La Vera Cruz in New Spain, from whence Dr Houſtoun ſent me the ſeeds. It is a tender plant, ſo muſt be treated in the ſame manner as hath been directed for the former ſort.

The ſixth ſort grows naturally at La Vera Cruz in New Spain. This hath a perennial root, from which ariſe ſeveral upright ſtalks three feet high, garniſhed with long narrow leaves, ſawed on their edges, placed alternate, and have appendages which run along the ſtalk from one to the other, forming a border or wing to the ſtalks. The flowers are produced at the end of the ſtalks in round bunches, they are ſmall, and of a purple colour, and are ſucceeded by oblong flat ſeeds, crowned with down. This is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring, and the plants muſt afterward be tranſplanted into pots, and plunged into a freſh hot-bed, obſerving to ſcreen them from the ſun till they have taken freſh root; after which they muſt have a large ſhare of air, and about Midſummer they may be placed in the open air in a ſheltered ſituation, where they may remain till the end of September, when they ſhould be removed into the ſtove, and during the winter kept in a temperate degree of warmth. The ſecond year theſe plants will flower, but they do not perfect ſeeds in England.

The ſeventh ſort was ſent me from La Vera Cruz by the late Dr. Houſtoun, who found it growing there naturally. This hath a ſtrong woody ſtem, which riſes to the height of fourteen or ſixteen feet, covered with an Aſh-coloured bark, and is divided upward into many ligneous branches, garniſhed with ſpear-ſhaped leaves ſtanding alternate, on ſhort foot-ſtalks. Theſe branches are terminated by roundiſh bunches of white flowers, ſitting upon long foot-ſtalks, ſeveral of them being joined on the ſame foot-ſtalk. Theſe are not ſucceeded by ſeeds in England, ſo that the ſeeds muſt be procured from abroad, and theſe muſt be ſown on a hot-bed, and the plants afterward treated in the ſame manner as the fourth ſort.

The eighth ſort grows naturally at La Vera Cruz, from whence it was ſent me by the late Dr. Houſtoun; this is an annual plant, which grows in low moiſt places, where the water ſtands in winter; it hath an herbaceous branching ſtalk, which riſes about one foot high, garniſhed at each joint with one oval leaf, ſitting cloſe to the branches; theſe are ſawed on their edges, and covered with a white hairy down. The flowers are produced from the ſide of the branches on ſlender foot-ſtalks, each for the moſt part ſuſtaining three flowers, which are white, and are ſucceeded by chaffy ſeeds, crowned with down; the whole plant is viſcous, and will ſtick to the fingers of thoſe who handle it.

The ſeeds of this plant muſt be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſeparate pot, and plunged into a freſh hot-bed, and treated in the ſame manner as the other tender ſorts, but muſt have a large ſhare of air in warm weather, and frequently refreſhed with water. In July theſe plants will flower, and if the autumn proves favourable, they will ripen their ſeeds; a plant or two of this ſort may be preſerved for the ſake of variety, but there is little beauty in it.

The ninth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby ſtalk ſix or ſeven feet high, dividing into many ligneous branches, which have a meally bark, and garniſhed with ſpear-ſhaped leaves, ſitting cloſe to the branches; they are hairy, and of a ſilver colour on their under ſide, and are placed alternate. The flowers come out from the ſide of the branches, generally in looſe ſpikes, which grow horizontal, and ſtand on the upper ſide erect; but ſometimes they come out ſingle, ſitting cloſe between the leaf and branch; theſe are of a pale purple colour, and are ſucceeded by chaffy ſeeds, crowned with a down.

This ſort is propagated by ſeeds, which muſt be obtained from the country where it grows naturally, for it doth not produce ſeeds in England, though it has flowered ſeveral years in the Chelſea garden; the ſeeds muſt be ſown, and the plants afterward treated in the ſame manner as hath been before directed for the fourth ſort.

The tenth ſort grows naturally at La Vera Cruz, from whence it was ſent me by the late Dr. William Houſtoun; this hath a perennial root, and an annual ſtalk. It grows about three feet high; the leaves are from four to five inches long, and one and a half broad in the middle, and are rough like thoſe of Comfrey. The ſtalks are terminated by branching flower-ſtalks, each foot-ſtalk ſuſtaining ſeveral yellow flowers, not much unlike thoſe of the common ſort. This is propagated by ſeeds in the ſame manner as the ſixth ſort, and the plants muſt be treated in the ſame way. It will flower the ſecond year, but it doth not ripen ſeeds in England.

The eleventh ſort was ſent me from La Vera Cruz by the late Dr. Houſtoun; this hath a climbing ſhrubby ſtalk, which riſes fourteen or ſixteen feet high, and divides into many branches, garniſhed with leaves about the ſize of thoſe of the Bay-tree, and full as thick in their texture, having many deep tranſverſe nerves, running from the midrib to the ſides; they are of a pale green colour. The flowers are produced in long ſpikes, ranged on the upper ſide of the ſpike only, which come out from the ſide of the branches, pointed upward; theſe are large and white, and are ſucceeded by flat dark-coloured ſeeds, crowned with down.

This plant makes a fine appearance in the ſtove when it flowers, and as it retains its leaves all the year, ſo in the winter ſeaſon it affords an agreeable variety among other tender plants. The culture of this plant is the ſame as hath been directed for the fourth ſort, ſo need not be repeated.

The twelfth ſort was ſent me from Carthagena in New Spain, where it grows naturally, by the late Mr. Robert Millar, ſurgeon; this riſes with a ſhrubby ſtalk ſix or ſeven feet high, dividing into ſeveral ligneous branches, garniſhed with oval, ſmooth, entire leaves, having three longitudinal veins, placed alternate, cloſe to the branches. The flowers are produced in ſhort cloſe ſpikes at the end of the branches; theſe are white, and are ſucceeded by oblong flat ſeeds, crowned with down; this ſort is tender, ſo muſt be treated in the ſame manner as the fourth, and will abide ſeveral years with this management.

The

The thirteenth ſort grows naturally in the ſame country as the laſt mentioned, and was ſent me by the ſame gentleman; this riſes with a ſhrubby ſtalk eight or ten feet high, dividing into many long ſlender branches, garniſhed with ſpear-ſhaped leaves, three inches long, and three quarters of an inch broad in the middle, ending in acute points; the ſmaller branches are ſet with very narrow, oblong, pointed leaves, which grow cloſe to the ſtalks; and at each joint is produced one pretty large white flower, with a purple empalement; theſe flowers come out the whole length of the ſmall branches, ſitting cloſe to the baſe of the leaves, ſo that the plants make a pretty appearance in flower. This may be propagated in the ſame way as the fourth, and with that management it hath flowered very well, but it doth not produce ſeeds in England.

The fourteenth ſort was ſent me from Carthagena by the before-mentioned gentleman, who found it growing there in great plenty. This hath a ſtrong woody ſtem, riſing ten or twelve feet high, divided upward into many ſhort ligneous branches, whoſe joints are very cloſe to each other. The leaves come out alternate on every ſide the branches, to which they ſit very cloſe; they are ſmooth, one inch long, and half an inch broad, ending in acute points, having three longitudinal veins. The flowers are white, and produced in ſhort cloſe ſpikes, which come out from the ſide of the branches, and are ſucceeded by oblong flat ſeeds, crowned with down.

This is a tender plant, ſo requires the ſame treatment as the fourth ſort, with which it hath flowered very well, but hath not produced ſeeds in England.

The fifteenth ſort riſes with a ſhrubby ſtem to the height of ſix or ſeven feet, dividing into ſeveral branches, which have a dark brown bark, and are cloſely garniſhed with oval, ſpear-ſhaped, ſmooth leaves, having three longitudinal veins, ſtanding on ſhort foot-ſtalks, placed alternate on every ſide the branches. The flowers are produced on long naked foot-ſtalks, which extend five or ſix inches beyond the end of the branches; theſe are purple, and form a kind of round bunch: the empalement of the flower is compoſed of ſhort chaffy ſcales.

This grows naturally at Campeachy, from whence the ſeeds were ſent me by Mr. Robert Millar. It is a tender plant, ſo muſt be treated in the ſame way as is directed for the fourth ſort, with which it hath flowered, but hath not produced ſeeds in this country.

The ſixteenth ſort grows naturally at Campeachy, from whence I received the ſeeds; this riſes with a ſhrubby ſtalk to the height of ten or twelve feet, ſending out many ſtrong ligneous branches, covered with a dark-coloured bark, garniſhed with oblong, oval, blunt leaves, ſawed on their edges, and half embrace the ſtalks with their baſe: the flowers are purple, growing in round bunches at the end of the branches, and are ſucceeded by flat ſeeds, crowned with down.

This is alſo a tender plant, and requires the ſame treatment as the fourth ſort, with which it hath flowered, but doth not produce ſeeds in England.

If the ſeeds of theſe plants are ſown in autumn ſoon after they are ripe, there is no danger of their miſcarrying; but as theſe are moſt of them brought from abroad, they do not arrive here in good time, ſo the plants rarely come up the firſt year; therefore the ſeeds ſhould be ſown in pots, that they may be preſerved through the winter, and the following ſpring the plants will come up.

The ſeventeenth ſort grows naturally in Jamaica; this riſes with a ſhrubby branching ſtalk about four or five feet high. The lower branches and ſtalk are garniſhed with ſpear-ſhaped leaves about four inches long, and one broad in the middle; they are ſawed on their edges, and have ſhort foot-ſtalks; the leaves on the upper branches are much narrower, and end in acute points. The flowers are purple, and are produded in round bunches at the end of the branches, and are ſucceeded by downy ſeeds like the other ſpecies. This is tender, and requires the ſame culture as the fourth ſort.

The ſeventeenth ſort grows naturally in China: this is a biennial plant, which periſhes ſoon after the ſeeds are ripe. The ſtalks are hairy, riſing about two feet high, garniſhed with oblong oval leaves, which are entire, rough on their upper ſide, but have many ſtrong pale hairs on their under, placed alternately on the branches. The flowers are purple, coming out from the ſide of the branches in oblong ſpikes.

This ſort is propagated by ſeeds, which ſhould be ſown in pots in the autumn, if they can be procured at that ſeaſon; but the pots ſhould be placed in a garden-frame in winter, to prevent the ſeeds ſuffering by cold and wet. If the ſeeds are ſown in the ſpring, the plants rarely come up the ſame year, therefore it will be proper to ſcreen this in winter; when this is obſerved, the plants will riſe the following ſpring. When the plants are fit to remove, they ſhould be each planted in a ſeparate pot, and placed into a very moderate hot-bed, where they muſt be ſcreened from the ſun until they have taken root; after which they ſhould be gradually hardened to bear the open air, into which they ſhould be removed the beginning of June, placing them in a ſheltered ſituation, where the ſecond ſeaſon they will flower, and if the ſummer is good, they will ripen their ſeeds.

CONSERVATORY. See GREEN-HOUSE.

CONVAL LILY. See CONVALLARIA.

COPAIFERA, the balſam of Capevi.

The CHARACTERS are,

It hath no empalement; the flower conſiſts of five leaves, which expands in form of a Roſe; it hath ten ſhort ſtamina, crowned by long ſummits. The pointal is fixed in the center of the flower, which afterward becomes a pod, in which are contained one or two ſeeds, which are ſurrounded with a pulp of a yellow colour.

We know but one ſort of this tree, which is,

COPAIFERA (*Officinalis*) foliis pinnatis. *The balſam of Capevi.*

This tree grows near a village called Ayapel, in the province of Antiochi, in the Spaniſh Weſt-Indies; this is about ten days journey from Carthagena. There are great numbers of theſe trees in the woods about this village, which grow to the height of fifty or ſixty feet. Some of theſe trees do not yield any of the balſam, thoſe which do are diſtinguiſhed by a ridge which runs along their trunks; the trees are wounded in their center, and they place calabaſh ſhells, or ſome other veſſels to the wounded part to receive the balſam, which will all flow out in a ſhort time. One of theſe trees will yield five or ſix gallons of the balſam; but though theſe trees will thrive well after being tapped, yet they never afford any more balſam.

As this balſam is uſed in medicine, it deſerves our application to procure the trees, and cultivate them in ſome of the Engliſh colonies of America; for as the Engliſh are poſſeſſed of lands in ſo many different latitudes, they might cultivate moſt kinds of trees and plants from the different parts of the world, which are uſeful in medicine, dyeing, or for any other purpoſe of life.

The ſeeds of this tree were brought from the country of their growth by Mr. Robert Millar, ſurgeon, who ſowed a part of them in Jamaica, which he informed me had ſucceeded very well; ſo that we may hope to have theſe trees propagated in great plenty in a few years, in ſome of the Engliſh colonies, if the ſlothfulneſs of the inhabitants doth not ſuffer them to periſh, as they have the Cinnamon-tree, and ſome other uſeful plants, which have been carried thither by curious perſons.

There are not at preſent any of theſe trees in Europe, that I can learn; for thoſe ſeeds which Mr. Millar ſent over to England, were all deſtroyed by inſects in their paſſage, ſo that not one ſucceeded in the ſeveral places where they were ſown; but could freſh ſeeds be procured, the plants might be raiſed in England, and preſerved in the bark-ſtoves very well; for the country of their growth is much more temperate than many others, from whence we have been fur-

furniſhed with a great variety of plants, which ſucceed very well in the ſtoves, and ſome of them arrive to a great degree of perfection.

CORALLODENDRON. See ERYTHRINA.

CORCHORUS. Lin. Gen. Plant. 675. Tourn. Inſt. 259. tab. 135. Jews Mallow.

The CHARACTERS are,

The empalement of the flower is compoſed of five narrow ſpear-ſhaped leaves, which are erect. The flower hath five oblong blunt petals, which are no longer than the empalement. It hath many hairy ſtamina, which are ſhorter than the petals, terminated by ſmall ſummits. In the center is ſituated an oblong furrowed germen, ſupporting a ſhort thick ſtyle, crowned by a bifid ſtigma. The germen afterward becomes a cylindrical pod having five cells, which are filled with angular-pointed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's thirteenth claſs, intitled Polyandria Monogynia, the flowers having many ſtamina and but one ſtyle.

The SPECIES are,

1. CORCHORUS (*Olitorius*) capſulis oblongis, ventricoſis, foliorum infimis ſerraturis ſetaceis. Lin. Flor. Zeyl. 213. *Jews Mallow with oblong ſwelling pods, and the ſaws on the under ſide of the leaves terminating with briſtles.* Corchorus ſive Melochia. J. B. 2. 982. *Common Jews Mallow.*
2. CORCHORUS (*Æſtuans*) capſulis oblongis, ſexſulcatis ſexcuſpidatis, foliis cordatis infimis ſerraturis ſetaceis. Lin. Sp. 746. *Jews Mallow with oblong furrowed pods, heart-ſhaped leaves, whoſe ſaws terminate with briſtles.* Corchorus Americana, carpini foliis, ſextuplici capſula prælonga. Pluk.
3. CORCHORUS (*Capſularis*) capſulis ſubrotundis, depreſſis, rugoſis. Flor. Zeyl. 214. *Jews Mallow with roundiſh depreſſed capſules which are rough.* Corchorus Americana, prælongis foliis, capſula ſtriata ſubrotunda brevi. Pluk.
4. CORCHORUS (*Tetragonis*) foliis ovato-cordatis crenatis, capſulis tetragonis, apicibus reflexis. *Jews Mallow with oval heart-ſhaped leaves which are crenated, and four-cornered capſules, whoſe points are reflexed.* Corchorus flore flavo, fructu carophylloide. Pluk.
5. CORCHORUS (*Linearibus*) foliis lanceolatis, ſerrato dentatis, capſulis linearibus, compreſſis, bivalvibus. *Jew Mallow with ſpear-ſhaped leaves, which are indented like the teeth of a ſaw, and narrow, compreſſed, bivalvular pods.*
6. CORCHORUS (*Bifurcatis*) foliis cordatis, ſerratis, capſulis linearibus, compreſſis, apicibus bifurcatis. *Jews Mallow with heart-ſhaped ſawed leaves, and narrow compreſſed pods, whoſe points have two horns.*
7. CORCHORUS (*Siliquoſus*) capſulis linearibus compreſſis, foliis lanceolatis æqualiter ſerratis. Lin. Sp. 746. *Jews Mallow with compreſſed capſules, and ſpear-ſhaped leaves equally ſawed on their edges.* Corchorus Americana, foliis & fructu auguſtioribus. Tourn. Inſt. R. H. 259.
8. CORCHORUS (*Hirſuta*) capſulis ſubrotundis lanatis, foliis ovatis obtuſis tomentoſis æqualiter ſerratis. Lin. Sp. 747. *Jews Mallow with roundiſh downy pods, and obtuſe, oval, woolly leaves, which are equally ſawed on their edges.* Corchoro affimis Chamædryos folio, flore ſtamineo, ſeminioribus atris quadrangulis duplici ſerie diſpoſitis. Sloan. Cat. 50.

The firſt ſpecies, Rauwolf ſays, is ſown in great plenty about Aleppo, as a pot-herb, the Jews boiling the leaves of this plant to eat with their meat; this he ſuppoſes to be the Olus Judaicum of Avicenna, and the Corchorum of Pliny.

This plant grows in the Eaſt and Weſt-Indies, from both which places I have ſeveral times received the ſeeds. In the Eaſt-Indies the herb is uſed in the ſame manner as in the Levant, as I have been informed; but I do not hear that it is uſed by the inhabitants of America.

It is an annual plant, which riſes about two feet high, dividing into ſeveral branches, garniſhed with leaves of different ſizes and forms; ſome are ſpear-ſhaped, others are oval, and ſome almoſt heart-ſhaped; they are of a deep green, and ſlightly indented on their edges, having near their baſe two briſtly ſegments, which are reflexed. They have very long ſlender foot-ſtalks, eſpecially thoſe which grow on the lower part of the branches. The flowers ſit cloſe on the oppoſite ſide of the branches to the leaves, coming out ſingly; they are compoſed of five ſmall yellow petals, and a great number of ſtamina ſurrounding the oblong germen, which is ſituated in the center of the flower, and afterward turns to a rough ſwelling capſule, two inches long, ending in a point, opening in four cells, which are filled with angular greeniſh ſeeds. This plant flowers in July and Auguſt, and the ſeeds ripen in autumn.

The ſecond ſort grows naturally in ſeveral iſlands of the Weſt-Indies, from whence the ſeeds have been ſent me; this is alſo an annual plant, which riſes with a ſtrong herbaceous ſtalk two feet high, divided upward into two or three branches, garniſhed with heart-ſhaped leaves, ſawed on their edges, ſtanding upon long foot-ſtalks; and between theſe are ſeveral ſmaller leaves nearly of the ſame form, ſitting cloſe to the branches. The flowers come out ſingly on the ſide of the branches, as the other, which are ſhaped like them, and are ſucceeded by longer ſwelling pods, which are rough, and have four longitudinal furrows; theſe open into four parts at the top, and contain four rows of angular ſeeds. It flowers and ſeeds at the ſame time with the former ſort.

The third ſort grows naturally in both Indies; I have received the ſeeds of this from ſeveral parts of India and America; this is alſo an annual plant, which riſes with a ſlender herbaceous ſtalk about three feet high, ſending out ſeveral weak branches, which are garniſhed at each joint by one leaf of an oblong heart-ſhape, ending in a long acute point, and are ſawed on their edges, ſtanding upon ſhort foot-ſtalks. The flowers come out ſingly on the ſide of the branches, to which they ſit very cloſe; they are ſmaller than thoſe of the former ſorts, and are ſucceeded by ſhort roundiſh ſeed-veſſels, which are rough, and flatted at the top, having ſix cells filled with ſmall angular ſeeds. This flowers and ſeeds at the ſame time as the former.

The fourth ſort is alſo a native of both Indies, from whence I have received the ſeeds; this is an annual plant, which riſes about two feet high, dividing into ſmall branches, garniſhed with oval heart-ſhaped leaves, ſawed on their edges. The flowers of this are very ſmall, of a pale yellow, and are ſucceeded by ſwelling, rough, four-cornered ſeed-veſſels, about an inch long, flatted at the top, where there are four horns, which are reflexed, ſo that theſe have ſome reſemblance in ſhape to the Clove. This flowers and ſeeds about the ſame time as the former ſorts.

The ſeeds of the fifth ſort were ſent me from Carthagena in New Spain, where the plants grow naturally; this is an annual plant, which riſes about three feet high, ſending out ſeveral weak ſide branches, garniſhed with leaves about three inches long, and one broad in the middle, leſſening gradually to both ends, and are indented on the edges like the teeth of a ſaw, ſitting cloſe to the branches. The flowers come out ſingly, oppoſite to the leaves; they are very ſmall, of a pale yellow, and are ſucceeded by ſeed-veſſels near two inches long, which are flat, and have two cells filled with ſmall angular ſeeds. This flowers and ripens its ſeeds about the ſame time as the former.

The ſeeds of the ſixth ſort were ſent me from Jamaica by the late Dr. Houſtoun; this is an annual plant, which riſes with a ſtrong herbaceous ſtalk between three and four feet high, ſending out ſeveral ſide branches, which grow erect, garniſhed with heart-ſhaped leaves ſawed on their edges, ſtanding upon long ſlender foot-ſtalks; between theſe grow many ſmaller leaves nearly of the ſame form, ſitting cloſe to the branches. The flowers come out from the ſide of the branches, on ſhort foot-ſtalks; they are very ſmall, of a pale yellow, and are ſucceeded

by flat ſeed-veſſels near three inches long, ending in two horns; theſe open in two cells, which are filled with ſmall angular ſeeds.

The ſeeds of the ſeventh ſort were ſent me from Barbadoes, where the plant grows naturally, for I have alſo had it riſe in the earth which came over from thence in tubs with growing plants: this riſes about the ſame height as the ſixth, ſending out ſeveral weak ſide branches, garniſhed with long narrow leaves, which are rough, and ſawed on their edges, ſitting cloſe to the branches; between the larger leaves come out ſeveral ſmall ones, which are placed irregularly on the branches. The flowers are ſmall, of a pale yellow, and come out on the ſide of the branches oppoſite to the leaves; theſe are ſucceeded by very narrow compreſſed pods two inches long, opening with two valves, and filled with ſmall angular ſeeds. It flowers and ſeeds at the ſame time with the former.

The eighth ſort grows naturally in Jamaica; this riſes with a ſhrubby ſtalk four feet high, dividing into a great number of ſmall branches, which are cloſely garniſhed with ſmall, oval, ſawed leaves, ſitting cloſe to the branches; between theſe are many very ſmall leaves, placed without order: the flowers are produced on the ſide of the branches on very ſhort foot-ſtalks; theſe are ſmall, and the petals ſoon fall off, ſo that it has been ſuppoſed to have no petals. The flowers are ſucceeded by compreſſed ſeed-veſſels three inches long, which are rounded at their points, and open with two valves at the top, containing a great number of ſmall angular ſeeds. This plant hath a perennial ſtalk, ſo may be preſerved through the winter in a moderate ſtove, and the ſecond year will flower in June, and produce ripe ſeeds in autumn; but when the plants are brought forward ſo as to flower the firſt year, they ſeldom perfect their ſeeds, and theſe plants cannot be ſo well preſerved as thoſe which are treated hardily in the ſummer.

All theſe ſorts are too tender to thrive in England in the open air, therefore their ſeeds muſt be ſown on a hot-bed in the ſpring; and when the plants are come up fit to remove, they ſhould be tranſplanted on a freſh hot-bed to bring the plants forward, otherwiſe they will not ripen ſeeds. After the plants are rooted in the new hot-bed, they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon, for they muſt not be drawn up weak; when the plants have obtained ſtrength, they ſhould be tranſplanted each into a ſeparate pot, and plunged into a hot-bed, obſerving to ſhade them from the ſun till they have taken root; then they muſt have a large ſhare of air every day, and ſhould be frequently refreſhed with water; and in June they ſhould be gradually inured to the open air, and part of them may be ſhaken out of the pots, and planted in a warm border, where, if the ſeaſon proves warm, they will flower and perfect their ſeeds; but as theſe will ſometimes fail, it will be proper to put one or two plants of each ſort into pots, which ſhould be placed in a glaſs-caſe, where they may be ſcreened from bad weather, and from theſe good ſeeds may always be obtained. The laſt ſort may alſo be treated in the ſame manner during the ſummer ſeaſon, but in autumn they muſt be removed into the ſtove, and plunged into the bark-bed, and theſe will flower early the ſecond year, and ripen ſeeds.

CORDIA. Plum. Nov. Gen. 13. tab. 14. Sebeſtena. Dillen. Hort. Elth. 225. Sebeſten.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, indented in three parts. It hath one funnel-ſhaped petal, whoſe tube is the length of the empalement, and the top is divided into four, five, or ſix parts, which are obtuſe and erect. It hath five awl-ſhaped ſtamina, terminated by long ſummits, and in the center a roundiſh pointed germen, ſupporting a bifid ſtyle, crowned by two obtuſe ſtigmas. The germen afterward becomes a dry berry, which is globular and pointed, faſtened to the empalement, and incloſes a furrowed nut with four cells.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CORDIA (*Sebeſtina*) foliis oblongo-ovatis, repandis, ſcabris. Lin. Sp. Plant. 190. *Cordia with oblong, oval, rough leaves, turning backward.* Caryophyllus ſpurius inodorus, folio ſubrotundo, ſcabro, flore racemoſo, hexapetaloide, coccineo. Sloan. Cat. 136. *Commonly called Lignum Aloes.*
2. CORDIA (*Myxa*) foliis tomentoſis, corymbis lateralibus, calycibus decemſtriatis. Lin. Sp. 273. *Cordia with oval woolly leaves, flowers growing in a corymbus from the ſide of the branches, and empalements with ten ſtripes.* Sebeſtina domeſtica ſive Myxa. Com. Hort. Amſt. 1. 139. *The cultivated Sebeſten.*
3. CORDIA (*Macrophylla*) foliis ovatis, villoſis ſeſquipedalibus. Lin. Sp. Plant. 274. *Cordia with oval woolly leaves half a foot long.* Prunus racemoſa, foliis oblongis hirſutis maximis, fructu rubro. Sloan. Cat. Jam. 184.

The firſt ſort grows naturally in ſeveral iſlands in the Weſt-Indies: this riſes with ſeveral ſhrubby ſtalks eight or nine feet high, which are garniſhed toward the top with oblong, oval, rough leaves, ſtanding alternate on ſhort foot-ſtalks; they are of a deep green on their upper ſide. The flowers terminate the branches, growing in large cluſters upon branching foot-ſtalks, ſome ſuſtaining one, others two, and ſome have three flowers, which are large, funnel-ſhaped, having long tubes, which ſpread open at the top, where it is divided into five obtuſe ſegments; they are of a beautiful ſcarlet, ſo make a fine appearance.

The ſecond ſort is by moſt botaniſts believed to be the Myxa of Cæſalpinus, which is the beſt Sebeſten of the ſhops; the fruit of which was formerly uſed in medicine, but of late years has been ſeldom brought to England, therefore is rarely ordered. This is called Aſſyrian Plum, from the country where it naturally grows. It riſes to the height of our common Plum-trees, but was very rare in this country till the year 1762, when there was ſome of the fruit ſent from Egypt, by thoſe perſons who were ſent to travel at the king of Denmark's expence, from which fruit ſome plants have been raiſed in the Chelſea garden.

The third ſort was diſcovered by father Plumier, in ſome of the French iſlands of America; and ſince was found in the bay of Campeachy, by Mr. Robert Millar, who ſent the ſeeds to England: this ſort grows to the height of eighteen or twenty feet in the natural places where it is found wild; it hath winged leaves, which are large, entire, and ſmooth; but it hath not as yet flowered in England, ſo I can give no farther account of it.

Theſe plants, being natives of warm countries, are too tender to live through the winter in this country, unleſs they are preſerved in a ſtove: they are all propagated by ſeeds, which muſt be procured from the countries of their natural growth; theſe ſeeds muſt be ſown in ſmall pots, which muſt be plunged into a good hot-bed of tanners bark in the ſpring; and if the ſeeds are freſh and good, the plants will begin to appear in ſix or eight weeks after. Theſe muſt be brought forward in the hot-bed, by being treated as other tender exotic plants, obſerving frequently to water them in ſummer; and in July, if the plants have made much advance, they ſhould be gradually hardened, otherwiſe they will grow ſo weak as not to be eaſily preſerved through the winter. As theſe plants obtain ſtrength, they will become more hardy; but during the two firſt winters, it will be proper to plunge them into the tan-bed in the ſtove; but when they begin to have woody ſtems, they may be placed on ſhelves, in a dry ſtove; where, if they are kept in a moderate degree of heat, they may be preſerved very well (eſpecially the firſt ſort) which is ſomewhat hardier than the others. This may alſo be placed abroad in a warm ſituation, in the beginning of July, where

the plants may remain till the middle of September, provided the ſeaſon continues warm, otherwiſe they muſt be removed into the ſtove ſooner.

The firſt ſort produces very fine flowers, of a ſcarlet colour, in large bunches, at the extremity of the branches, after the ſame manner as the Oleander or Roſe-bay; but theſe flowers are much larger, and of a much finer colour.

A ſmall piece of the wood of this tree being put on a pan of lighted coals, will ſend forth a moſt agreeable odour, and will perfume a whole houſe.

COREOPSIS. Lin. Gen. Pl. 879. Tickſeed.

The CHARACTERS are,

The common empalement of the flower is double, the outer being compoſed of eight leaves, placed circularly; the inner is in every part larger, membranaceous, and coloured. The diſk of the flower is compoſed of many hermaphrodite florets, which are tubular, and divided into five parts at the top; theſe have each five hairy ſtamina, terminated by cylindrical ſummits. In their center is ſituated a compreſſed germen with two horns, ſupporting a ſlender ſtyle, crowned by an acute biſid ſtigma. The germen afterward becomes a ſingle orbicular ſeed, convex on one ſide, and hollow on the other, having a membranaceous border, and two horns on the top. The border or rays of the flower is compoſed of eight female florets which are large, and tongue-ſhaped, indented in five parts; theſe have no ſtamina, but a germen like the other, without any ſtyle or ſtigma, and are abortive.

This genus of plants is ranged in the third ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Fruſtranea; the flowers of this claſs and ſection are compoſed of hermaphrodite florets which are fruitful, and female half florets which are barren.

The SPECIES are,

1. COREOPSIS (*Alternifolia*) foliis lanceolatis, ſerratis, alternis, petiolatis decurrentibus. Hort. Upſal. 270. *Tickſeed with ſpear-ſhaped ſawed leaves, placed alternate, and winged foot-ſtalks.* Chryſanthemum Virginianum, caule alato, ramoſius, flore minore. Pluk. Alm. 100.
2. COREOPSIS (*Lanceolata*) foliis lanceolatis, integerrimis ciliatis. Lin. Sp. Plant. 1283. *Tickſeed with ſpear-ſhaped leaves which are entire.* Bidens ſucciſæ folio, radio amplo laciniato. Hort. Elth. 55.
3. COREOPSIS (*Verticillata*) foliis decompoſito pinnatis, linearibus. Lin. Sp. Plant. 907. *Tickſeed with decompound, winged, narrow leaves.* Ceratocephalus delphinii foliis. Vaill. Act. 1720.
4. COREOPSIS (*Tripteris*) foliis ſubternatis, integerrimis. Hort. Upſal. 269. *Tickſeed with leaves growing by threes, which are entire.* Chryſanthemum Virginianum, folio acutiore, lævi, trifoliato, ſc. anagyridis folio. Mor. Hiſt. 3. p. 21.
5. COREOPSIS (*Radiato*) foliis lineari-lanceolatis, acutè ſerratis, oppoſitis radio amplo integro. *Tickſeed with narrow ſpear-ſhaped leaves, which are oppoſite and ſharply ſawed, and the rays of the flower large and entire.*

The firſt ſort grows naturally in North America every where. This hath a perennial root; the ſtalks decay to the root every winter, which are ſtrong, herbaceous, and riſe to the height of eight or ten feet, garniſhed with ſpear-ſhaped leaves ſawed on their edges, from three to four inches long, and one broad in the middle, placed alternate on every ſide the ſtalks, having ſhort foot-ſtalks, with a border or wing running from one to the other, the whole length of the ſtalk. The flowers grow at the top of the ſtalks, forming a ſort of corymbus, each foot-ſtalk ſuſtaining one, two, or three yellow flowers, ſhaped like Sun-flowers, but much ſmaller. This flowers in September and October, but doth not produce ſeeds in England. It is a very hardy plant, and may be propagated in plenty by parting the roots. The beſt time for this is in autumn, when the ſtalks begin to decay. It will thrive in almoſt every ſoil and ſituation.

The ſecond ſort is an annual plant. The ſeeds of this were brought me from Carolina by Mr. Cateſby, in the year 1726. This hath an upright ſtalk, garniſhed with ſmooth, narrow, ſpear-ſhaped leaves, placed oppoſite, which are entire; from the wings of the leaves come out the foot-ſtalks of the flowers, by pairs oppoſite, and ſtand erect; the lower part of theſe have one or two pair of very narrow leaves, but the upper is naked, and terminated by one large yellow flower, whoſe border or rays are deeply cut into ſeveral ſegments; theſe are ſucceeded by flat winged ſeeds, which, when ripe, roll up; the naked foot-ſtalks of theſe flowers are more than a foot long. This muſt be ſown upon a gentle hot-bed in the ſpring, and when the plants are fit to tranſplant, they ſhould be each planted into a ſeparate ſmall pot, and plunged into a freſh hot-bed to bring them forward; and in June they ſhould be inured by degrees to the open air, and afterward ſome of them may be ſhaken out of the pots, and planted in a warm border; where, if the ſeaſon is good, they will flower in the middle of July, and ripen their ſeeds the beginning of September.

The third ſort hath a perennial root, ſending up many ſtiff angular ſtalks, which riſe upward of three feet high, garniſhed at each joint with decompound winged leaves, ſtanding oppoſite; theſe are very narrow and entire. The branches alſo come out by pairs oppoſite, as do alſo the foot-ſtalks of the flowers; theſe are long, ſlender, and each terminated by a ſingle flower, of a bright yellow colour, the rays or border being oval and entire. The diſk or middle is of a dark purple colour. Theſe appear in July, and continue till September, during which time they make a fine appearance. This grows naturally in Maryland and Philadelphia. It is propagated by parting the roots, in the ſame manner as the firſt ſort, and delights in a light loamy earth, and ſunny expoſure.

The fourth ſort hath a perennial root. It grows naturally in many parts of North America, but has been long cultivated in the Engliſh gardens; the ſtalks of this are ſtrong, round, and ſmooth, riſing ſix or ſeven feet high, garniſhed at each joint with ſome trifoliate leaves, which ſtand oppoſite. The flowers are produced in bunches at the top of the ſtalks, ſtanding upon long foot-ſtalks; they are of a pale yellow, with a dark purple diſk. It flowers in July, but ſeldom produces good ſeeds in England. This ſort is propagated by parting the roots in the ſame manner as the firſt, but requires a better ſoil and poſition.

The fifth ſort grows naturally in South Carolina, from whence the ſeeds were ſent me by the late Dr. Dale. This is an annual plant, which riſes with upright ſtalks to the height of four feet, garniſhed with narrow ſpear-ſhaped leaves, ending in long points, and are deeply ſawed on their edges, ſtanding oppoſite at each joint, upon ſhort foot-ſtalks; theſe leaves are from three to four inches long, and three quarters of an inch broad in the middle, of a deep green on their upper ſide, and pale on their under. At all the upper joints of the ſtalks come out two long ſlender foot-ſtalks, one on each ſide, which are garniſhed with two or three pair of ſmall leaves, and terminated by one flower, compoſed of ſeven female half florets, which compoſe the ray; theſe are oval and entire. The diſk is compoſed of a great number of hermaphrodite florets, which are of a dark colour, and the ſummits of the ſtamina are of a bright yellow; theſe hermaphrodite florets are each ſucceeded by one flat bordered ſeed, having two horns or teeth. This ſort flowers in Auguſt, and if the autumn proves favourable, will ripen its ſeeds in October; but in cold ſeaſons it will not perfect ſeeds in England.

This is propagated by ſeeds, which ſhould be ſown on a warm border in autumn, and the plants will come up the following ſpring; for if the ſeeds are ſown in the ſpring, the plants ſeldom riſe till the year after. When the plants are fit to remove, they ſhould be carefully taken up, and either planted where they are deſigned to remain, or into a nurſery-bed, at four inches diſtance, to get ſtrength, obſerving to ſhade them from the ſun till they have taken freſh root; after

after which, thoſe which are planted out for good, will require no other treatment but to keep them clean from weeds; and as they advance in height, they ſhould be ſupported by ſticks, otherwiſe the ſtrong winds in autumn often break them; and thoſe which were placed in a nurſery-bed, when they have obtained proper ſtrength, ſhould be taken up and tranſplanted with balls of earth to their roots, where they are deſigned to ſtand for flowering.

As theſe plants continue to produce flowers till the froſt puts a ſtop to them, they merit a place in every curious garden, eſpecially thoſe which do not ramble and ſpread too much. The firſt is the leaſt deſerving of either, ſo is ſeldom preſerved, but in botanic gardens for the ſake of variety.

CORIANDRUM. Lin. Gen. Plant. 318. Tourn. Inſt. R. H. 316. tab. 168. [of Κορίανδρον, of Κόρις, *Gr.* a tick; ſo called, either becauſe it has the ſcent of this inſect, or, as others ſay, becauſe it drives away or kills them; and Ἀνδρῶν, *Gr.* the iſle where it grew plentifully.] Coriander.

The CHARACTERS are,

It is a plant with an umbellated flower; the univerſal umbel hath but few rays, the partial umbels have many. The firſt hath no involucrum, but the latter hath a three-leaved one; the proper empalement is divided into five parts; the rays of the principal umbel are difform. The hermaphrodite flowers which form the diſk, have five equal heart-ſhaped petals, which are inflexed, but thoſe of the rays have five unequal petals of the ſame form; they have each five ſtamina, terminated by roundiſh ſummits. The germen which is ſituated under the flower, ſupports two ſtyles, crowned by ſmall radiated ſtigmas; the germen afterward becomes a ſpherical fruit, divided into two parts, each having a hemiſpherical concave ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. CORIANDRUM (*Sativum*) fructibus globoſis. Hort. Cliff. 100. *Coriander with globular fruit.* Coriandrum majus. C. B. P. 158. *Greater Coriander.*
2. CORIANDRUM (*Teſticulatum*) fructibus didymis. Hort. Cliff. 100. *Coriander with twin fruit.* Coriandrum minus teſticulatum. C. B. P. 158.

The firſt of theſe ſpecies is the moſt common kind, which is cultivated in the European gardens and fields for the ſeeds, which are uſed in medicine. The ſecond ſort is leſs common than the firſt, and is ſeldom found but in botanic gardens in theſe parts of Europe. Theſe plants grow naturally in the ſouth of France, Spain, and Italy; but the firſt ſort has been long cultivated in the gardens and fields, though at preſent there is not near ſo much of it ſown in England as was ſome years paſt.

Theſe plants are propagated by ſowing their ſeeds in the autumn, in an open ſituation, on a bed of good freſh earth; and when the plants are come up, they ſhould be hoed out to about four inches diſtance every way, clearing them from weeds; by which management theſe plants will grow ſtrong, and produce a greater quantity of good ſeeds. The firſt ſort was formerly cultivated in the gardens as a ſallad herb, and in the Eaſt-Indies is ſtill much cultivated; for the plant is of great uſe in moſt of their compound diſhes, as a culinary herb, and the ſeeds are alſo much eſteemed for the like purpoſes; but in Europe neither of them are now much uſed.

The ſecond ſort will riſe eaſily from ſeeds, if they are ſown in the autumn; but thoſe which are ſown in the ſpring rarely ſucceed, or at leaſt do not come up till the following ſpring.

CORIARIA. Lin. Gen. Plant. 458. Niſſol. Act. Reg. 1711. Myrtle-leaved Sumach, vulgò.

The CHARACTERS are,

It is male and hermaphrodite in different plants; the male flowers have a five-leaved empalement; the flower has five leaves, which are joined to the empalement; theſe have ten ſlender ſtamina, terminated by oblong ſummits; the hermaphrodite flowers have the like empalement, and the ſame number of petals, and in the center are placed five pointals, which turn to a berry, incloſing five kidney-ſhaped ſeeds.

This is ranged in the ninth ſection of Linnæus's twenty-ſecond claſs, intitled Dicœcia Decandria, the plants having male and hermaphrodite flowers on different roots.

The SPECIES are,

1. CORIARIA (*Myrtifolia*) foliis ovato oblongis. Hort. Upſal. 299. *Myrtle-leaved Sumach, with oblong oval leaves.* Coriaria vulgaris mas. Niſſol. Act. 1711.
2. CORIARIA (*Fœmina*) vulgaris fœmina. Lin. Hort. Cliff. *Female Myrtle-leaved Sumach.*

The ſort with male flowers has been the moſt common in England, the other having been very rarely raiſed in our gardens: a few years paſt, when ſome plants were raiſed from ſeeds, which came from Italy, in the Chelſea garden, where the plants ſo raiſed have moſt of them proved of the hermaphrodite ſort, and have produced great quantities of ſeeds, which have grown, though there is not one plant of the male ſort at preſent in the garden; the not finding any plants in the Engliſh gardens, but thoſe with male flowers, occaſioned my writing abroad for the ſeeds. Theſe grow wild in great plenty about Montpelier in France, where it is uſed for tanning of leather; and, from this uſe, has been titled by the botaniſts, Rhus coriariorum, i. e. Tanners Sumach.

Theſe ſhrubs ſeldom grow more than three or four feet high; and as they creep at the root, they ſend forth many ſtems, whereby they form a thicket, ſo may be planted to fill up vacancies in wilderneſs quarters; but they are improper for ſmall gardens, where they will take up too much room; and as there is no great beauty in the flowers, they are only admitted for variety.

It is ſtrange that Monſieur Niſſol, who lived upon the place where theſe grew in plenty, who conſtituted this genus, in the Memoirs of the Acadamy at Paris, has taken no notice of their being male and hermaphrodite in different plants.

It may be propagated plentifully from the ſuckers, which are produced from the creeping roots in great abundance; theſe ſhould be taken off in March, and planted into a nurſery to form good roots, where they may continue one or two years, and then muſt be removed to the places where they are to remain.

This plant delights in a loamy ſoil which is not too ſtiff, and ſhould be placed where it may have ſhelter from the north and eaſt winds; where it will endure the cold of our ordinary winters very well, and will flower better than if it is preſerved in pots and ſheltered in the winter, as hath been by ſome practiſed.

CORINDUM. See CARDIOSPERMUM.

CORIS. Lin. Gen. Plant. 216. Tourn. Inſt. 652. tab. 423. We have no Engliſh name for this plant.

The CHARACTERS are,

The empalement of the flower is of one leaf, with a ſwelling belly, but cloſed at the top, where it is divided into five parts, which are crowned by five ſpines; the flower hath one irregular petal, whoſe tube is the length of the empalement, and ſpread open at the top, where it is divided into five oblong ſegments, which are obtuſe and indented; it hath five briſtly ſtamina, terminated by ſingle ſummits. In the center is ſituated a round germen, ſupporting a ſlender declining ſtyle, crowned by a thick ſtigma; the empalement afterward becomes a globular capſule, having five valves, incloſing ſeveral ſmall oval ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

We have but one SPECIES of this plant, viz.

CORIS (*Monſpelienſis*). Hort. Cliff. 68. Coris cærulea maritima. C. B. P. 280. *Blue maritime Coris.*

There are two other varieties of this plant, one with a red, and the other a white flower, but theſe are only accidental varieties ariſing from the ſame ſeeds.

Theſe plants grow wild about Montpelier, and in many other parts of the ſouth of France, and alſo in Italy; they ſeldom grow above ſix inches high, and

ſpread near the ſurface of the ground like heath; and in June, when they are full of flowers, they make a very pretty appearance.

They may be propagated by ſowing their ſeeds in the ſpring, on a bed of freſh earth; and when the plants are about an inch high, they ſhould be tranſplanted, ſome of them into pots filled with freſh light earth, that they may be ſheltered in winter; and the others into a warm border, where they will endure the cold of our ordinary winters very well, but in ſevere froſt they are generally deſtroyed; for which reaſon, it will be proper to have ſome plants of each ſort in pots, which may be put under a common hot-bed frame in winter, where they may be covered in froſty weather; but when it is mild, they ſhould have a great ſhare of free air: theſe plants ſometimes produce ripe ſeeds in England; but as they do not conſtantly perfect their ſeeds, it will be proper to increaſe them from ſlips and cuttings, which will take root, if planted about the end of Auguſt on a very gentle hot-bed, and ſhaded from the ſun and duly watered.

CORISPERMUM. Lin. Gen. Plant. 12. Juſſ. Act. R. S. 1712. Tickſeed.

The Characters are,

The flower hath no empalement, it hath two compreſſed incurved petals, which ſtand oppoſite and are equal; it hath one, two, or three ſtamina, which are ſhorter than the petals, terminated by ſingle ſummits, with a compreſſed pointed germen, ſupporting two hairy ſtyles, crowned by acute ſtigmas. The germen afterward becomes one oval compreſſed ſeed, with an acute border.

This genus of plants is ranged in the ſecond ſection of Linnæus's firſt claſs, intitled Monandria Digynia, the flower having one ſtamina and two ſtyles.

The Species are,

1. Corispermum (*Hyſopifolium*) floribus lateralibus Hort. Upſal. 2. *Tickſeed with flowers on the ſide of the ſtalks.* Coriſpermum Hyſſopifolium. Juſſ. Act. R. S. 1712. *Hyſſop-leaved Tickſeed.*
2. Corispermum (*Squarroſum*) ſpicis ſquarroſis. Hort. Upſal. 3. *Tickſeed with rough ſpikes.* Rhagroſtis foliis arundinaceis. Buxb. Cent. 3. p. 30. *Rhagroſtis with Reed-like leaves.*

Theſe plants are preſerved in botanic gardens for the ſake of variety; but as they have no beauty, are ſeldom cultivated in other gardens.

The firſt ſort is an annual plant, which, if ſuffered to ſcatter its ſeeds, the ground will be plentifully ſtocked with the plants, which will require no other care but to prevent the weeds from over-growing them.

The ſecond will not grow but in marſhy places, where there is ſtanding water; over the ſurface of which this plant will ſoon extend, when once it is eſtabliſhed.

As we had no Engliſh name to this genus, I have given it this of Tickſeed, which correſponds with the Greek name.

CORK-TREE. See Quercus.

CORN-FLAG. See Gladiolus.

CORNICULATE PLANTS [Plantæ Corniculatæ,] are ſuch, as after each flower, produce many horned ſeed-pods, called Siliquæ.

CORN-MARIGOLD. See Chrysanthemum.

CORN-SALLAD. See Valeriana.

CORNUS. Lin. Gen. Plant. 139. Tourn. Inſt. 641. tab. 410. [ſo called, of Cornu, *Lat.* a horn; becauſe its wood, or the ſhell of its fruit, is hard as a horn.] The Cornelian Cherry.

The Characters are,

It hath many flowers included in one common four-leaved involucrum, which is coloured. The flowers have each a ſmall empalement, ſitting on the germen, which is indented in four parts. They have four plain petals, which are ſmaller than the leaves of the involucrum, and four erect ſtamina, which are longer than the petals, terminated by roundiſh ſummits. The round germen ſituated below the empalement, ſupports a ſlender ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes an oval, or roundiſh berry, incloſing a nut, with two cells, having an oblong kernel.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flowers having four ſtamina and but one ſtyle.

The Species are,

1. Cornus (*Sanguinea*) arborea, cymis nudis. It. Weſtgoth. Lin. Sp. Plant. 117. *Dogwood-tree with naked ſhoots.* Cornus fœmina. C. B. P. 447. *Female Dogwood, and the Virga Sanguinea.* Matth.
2. Cornus (*Mas*) arborea, umbellis involucrum æquantibus. Hort. Cliff. 38. *Tree Dogwood with umbels equal to the involucrum.* Cornus hortenſis mas. C. B. P. 447. *Male Cornel, or Cornelian Cherry-tree.*
3. Cornus (*Florida*) arborea, involucro maximo, foliolis obverſè cordatis. Hort. Cliff. 38. *Tree Dogwood with a very large involucrum, and obverſe heart-ſhaped leaves.* Cornus mas, Virginiana, floſculis in corymbo digeſtis, à perianthio tetrapetalo albo radiatim cinctis. Pluk. Alm. 120.
4. Cornus (*Fœmina*) arborea, foliis lanceolatis, acutis, nervoſis, floribus corymboſis terminalibus. *Tree Dogwood with ſpear-ſhaped acute leaves which are veined, and flowers diſpoſed in a corymbus, terminating the branches.* Cornus fœmina Virginiana anguſtiore folio. Edit. prior. *Female Virginia Dogwood with a narrower leaf.*
5. Cornus (*Amomum*) arborea foliis ovatis petiolatis, floribus corymboſis terminalibus. *Tree Dogwood with oval leaves having foot-ſtalks, and flowers collected into a corymbus at the end of the branches.* Cornus Americana ſylveſtris, domeſticæ ſimilis, baccâ cærulei coloris elegantiſſimâ, Amomum Novæ Angliæ quorundam. Pluk. Phyt. tab. 169. f. 3. *By ſome ſuppoſed to be the true Amomum of New England.*
6. Cornus (*Candidiſſima*) arborea foliis lanceolatis, acutis, glabris, umbellis involucro minoribus, baccis ovatis. *Tree Dogwood with ſmooth, ſpear-ſhaped, pointed leaves, umbels ſmaller than the involucrum, and oval berries.* Cornus fœmina candidiſſimis foliis Americana. Pluk. Alm. 120.
7. Cornus (*Tartarica*) arborea foliis oblongo ovatis, nervoſis, infernè albis, floribus corymboſis terminalibus. *Tree Dogwood with oblong, oval, veined leaves, white on their under ſide, and flowers growing in a corymbus at the end of the branches.* Cornus ſylveſtris fructu albo. Amman. Ruth. *Wild Dogwood with a white fruit.*
8. Cornus (*Suecica*) herbacea ramis binis. Fl. Lapp. 55. *Herbaceous Dogwood with double branches.* Cornus pumila herbacea, chamæpericlymenum dicta. Hort. Elth. 108. *Low herbaceous Dogwood, called Dwarf Honeyſuckle.*

The firſt of theſe trees is very common in the hedges in divers parts of England, and is ſeldom preſerved in gardens. The fruit of this plant is often brought into the markets, and ſold for Buckthorn berries, from which it may be eaſily diſtinguiſhed, if the berries are opened to obſerve how many ſtones there are in each; which in this fruit is but one, but in the Buckthorn four, and they may be eaſily diſtinguiſhed by rubbing the juice of the berries on paper; that of the Buckthorn will ſtain the paper green, whereas the juice of this ſtains it purple. This tree is called Virga Sanguinea, from the young ſhoots being of a fine red colour. There is a variety of this tree with variegated leaves, which is preſerved in the nurſeries, but is not much eſteemed.

The ſecond ſort is very common in the Engliſh gardens, where it was formerly propagated for its fruit, which was by ſome people preſerved to make tarts. It is alſo uſed in medicine as an aſtringent and cooler: there is alſo an officinal preparation of this fruit, called Rob de Cornis. Of this there are two or three varieties, which differ only in the colour of their fruit, but that with the red fruit is the moſt common in England.

As the fruit of this tree is not at preſent much eſteemed, the nurſery-men about London propagate it as one of the ſorts which is commonly ſold as a flowering ſhrub, and is by ſome people valued for coming ſo early to flower; for if the ſeaſon is mild, the

flowers will appear by the beginning of February; and though there is no great beauty in the flowers, yet, as they are generally produced in plenty, at a ſeaſon when few other flowers appear upon trees, a few plants of them may be admitted for variety. The fruit of this tree is ſeldom ripe before September. The tree will grow eighteen or twenty feet high, and make a large head.

The third ſort is an American, from whence the ſeeds have been brought to England: this is found in all northern parts of America, as are alſo the fourth, fifth, and ſixth ſorts, being natives of the woods in Virginia, New England, Maryland, and Carolina. Theſe are all of them very hardy, and thrive well in the open air in England, ſo are cultivated by the nurſery-men near London, to add to the variety of their hardy trees: theſe grow to the ſame height with our common female Dogberry, and make a much better appearance. The ſhoots of the fifth ſort are of a beautiful red colour in winter; and in ſummer the leaves being large, of a whitiſh colour on their under ſide, and the bunches of white flowers growing at the extremity of every branch, renders this ſhrub valuable; and in autumn, when the large bunches of blue berries are ripe, they make a fine appearance.

The third ſort is now very common in the nurſeries, where it is known by the name of Virginia Dogwood. This ſort is of much humbler growth than either of the former, ſeldom riſing above ſeven or eight feet high, but is generally well garniſhed with leaves, which are larger than either of the other ſorts. This does not flower ſo plentifully as the other ſorts, nor have I yet ſeen any of theſe ſhrubs, which have produced berries in England, though they are as hardy as the other.

There is a variety of this with a red involucrum or cover to the flowers, which adds to the beauty of the plant; this was found wild in Virginia by Mr. Baniſter, and afterward by Mr. Cateſby. This and the former ſort are great ornaments to the woods in America, firſt by their early flowering in the ſpring before the green leaves appear; and in the winter they are alſo beautiful when the berries are ripe, which hang upon the ſhrubs till the ſpring.

The eighth ſort grows upon Cheviot-hills in Northumberland, and alſo upon the Alps, and other mountainous places in the northern countries, but is very difficult to preſerve in gardens; the only method is, to remove the plants from the places of their natural growth, with good balls of earth to their roots, and plant them in a moiſt ſhady ſituation, where they are not annoyed by the roots of other plants. In ſuch a ſituation they may be preſerved two or three years, but it rarely happens that they will continue much longer. This is a low herbaceous plant, whoſe ſtalks decay in the autumn.

All the ſorts of Dogwood may be propagated by their ſeeds, which, if ſown in autumn ſoon after they are ripe, will moſt of them come up the following ſpring; but if the ſeeds are not ſown in autumn, they will lie a year in the ground before the plants will appear, and when the year proves dry, they will ſometimes remain two years in the ground; therefore the place ſhould not be diſturbed, where theſe ſeeds are ſown, under two years, if the plants ſhould not come up ſooner. When the plants are come up, they ſhould be duly watered in dry weather, and kept clean from weeds; and the autumn following they may be removed, and planted in beds in the nurſery, where they may remain two years, by which time they will be fit to tranſplant where they are to remain for good. They are alſo propagated by ſuckers, and laying down the branches. Moſt of the ſorts produce plenty of ſuckers, eſpecially when they are planted on a moiſt light ſoil, which may be taken off from the old plants in autumn, and planted into a nurſery for a year or two, and then may be tranſplanted into the places where they are to remain; but thoſe plants which are propagated by ſuckers, rarely have ſo good roots as thoſe which are propagated by layers; and being much more inclinable to ſhoot out ſuckers, whereby they will fill the ground round them with their ſpawn, they are not near ſo valuable as thoſe plants which are raiſed from layers.

CORNUTIA. Plum. Nov. Gen. 17. Lin. Gen. Plant. 684. Agnanthus. Vaill. Act. R. 1722. We have no Engliſh name for this plant. It is ſo called from Cornutus, a phyſician of Paris, who publiſhed a hiſtory of Canada plants

The CHARACTERS are,

The flower hath a ſmall permanent empalement of one leaf, which is tubular, and indented in five parts at the top. The flower is of one petal, having a cylindrical tube, which is much longer than the empalement, and divided into four parts at the top; the upper ſegment is round and erect, the two ſide ones ſpread apart, and the lower is round and entire. It hath four ſtamina, two of theſe are longer than the tube, the other are ſhorter; they are terminated by inclining ſummits. In the center is ſituated the roundiſh germen, ſupporting a long ſtyle, divided into two parts, crowned by two thick ſtigmas. The germen afterward becomes a globular berry, ſitting upon the empalement, incloſing ſeveral kidney-ſhaped ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flowers having two long and two ſhort ſtamina, and the ſeeds are included in a capſule.

There is but one SPECIES of this genus, viz.

CORNUTIA (*Pyramidata*). Hort. Cliff. 319. Cornutia flore pyramidato cæruleo, foliis incanis. Nov. Gen. 32. *Cornutia with a blue pyramidal flower and hoary leaves.*

This plant was firſt diſcovered by father Plumier in America, who gave it the name. It is found in plenty in ſeveral of the iſlands in the Weſt-Indies, as alſo at Campeachy and La Vera Cruz, from both which places I received the ſeeds, which were collected by my late ingenious friend Dr. William Houſtoun, and afterward by Mr. Robert Millar, from the ſame country. It grows to the height of ten or twelve feet; the branches are four-cornered, grow ſtraggling, and the leaves are placed oppoſite. The flowers are produced in ſpikes at the end of the branches, which are of a fine blue colour; theſe uſually appear in autumn, and ſometimes will remain in beauty for two months or more.

It is propagated by ſeeds, which ſhould be ſown early in the ſpring on a hot-bed; and when the plants are come up, they ſhould be tranſplanted each into a ſeparate halfpenny pot, filled with light freſh earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them until they have taken root; after which they ſhould have freſh air let into the bed, in proportion to the warmth of the ſeaſon, and ſhould be frequently watered (for it naturally grows on ſwampy ſoils.) When the plants have filled theſe pots with their roots, they ſhould be ſhifted into others of a larger ſize, and plunged into a hot-bed again, where they ſhould be continued till October, when they muſt be removed into the bark-ſtove, and plunged into the tan, for otherwiſe it will be very difficult to preſerve them through the winter. The ſtove in which theſe plants are placed ſhould be kept to the temperate heat marked on Mr. Fowler's thermometers, which will agree better with them than a hotter ſtove. The third year from ſeeds theſe plants will flower, when they make a fine appearance in the ſtove, but they never perfect their ſeeds in England.

They may alſo be propagated by cuttings, which, if planted into pots filled with earth, and plunged into a bark-bed, obſerving to ſhade and water them, will take root, and muſt be afterwards treated as the ſeedling plants.

CORONA IMPERIALIS. See FRITILLARIA.

CORONA SOLIS. See HELIANTHUS.

CORONILLA, Jointed-podded Colutea.

The CHARACTERS are,

The flower hath a ſhort permanent empalement of one leaf, which is compreſſed, bifid, and erect. It hath a butterfly

butterfly flower, whoſe ſtandard is heart-ſhaped, and reflexed on each ſide. The wings are oval, and join at the top. The keel is ſhorter than the wings, is pointed and compreſſed. It hath nine ſtamina which are united, and one ſtanding ſingle, which are broad at the top, terminated by ſmall ſummits. In the center is ſituated an oblong taper germen, ſupporting a briſtly riſing ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a taper jointed pod, incloſing oblong ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, the flower having ten ſtamina, nine of which are united, and one ſtands ſingle. To this genus Dr. Linnæus has joined the Emerus of Cæſalpinus, and the Securidaca of Tournefort, whereby he multiplies the ſpecies; but as theſe differ eſſentially in their fructification, I ſhall treat of them ſeparately, following the example of all the former botaniſts.

The SPECIES are,

1. CORONILLA (*Glauca*) fruticoſa, foliis ſeptenis, ſtipulis lanceolatis. Lin. Sp. 1047. *Shrubby Coronilla with ſeven pair of ſmall leaves, and ſpear-ſhaped ſtipula.* Coronilla maritima glauco folio. Tourn. Inſt. 650.
2. CORONILLA (*Argentea*) fruticoſa foliolis undenis, extimo majore. Lin. Sp. Plant. 1049. *Shrubby Coronilla with eleven pair of ſmall leaves, the outer being the largeſt.* Coronilla argentea Cretica. Tourn. Inſt. 650.
3. CORONILLA (*Valentina*) fruticoſa foliis ſubnovenis ſuborbiculatis. Lin. Sp. Plant. 1047. *Shrubby Coronilla with nine lobes which are orbicular.* Polygala Valentina.
4. CORONILLA (*Hiſpanica*) fruticoſa enneaphylla, foliolis emarginatis, ſtipulis majoribus ſubrotundis. *Shrubby nine-leaved Coronilla, whoſe ſmall leaves are indented, and larger roundiſh ſtipulæ.* Coronilla ſiliquis & ſeminibus craſſioribus. Tourn. Inſt. R. H. 650.
5. CORONILLA (*Minima*) foliolis plurimis, ovatis, caule ſuffruticoſo declinato, pedunculis longioribus. *Coronilla with many oval lobes, a declining ſtalk ſomewhat ſhrubby, and longer foot-ſtalks to the flowers.* Coronilla minima. Tourn. Inſt. R. H. 650. *Smalleſt Coronilla.*
6. CORONILLA (*Varia*) herbacea, leguminibus erectis, teretibus, toroſis, numeroſis, foliis glabris. Hort. Cliff. 363. *Herbaceous Coronilla with many taper erect pods, and ſmooth leaves.* Coronilla herbacea flore vario. Tourn. Inſt. 650.
7. CORONILLA (*Cretica*) herbacea, leguminibus quinis, erectis, teretibus, articulatis. Prod. Leyd. 387. *Herbaceous Coronilla with five taper, erect, jointed pods.* Coronilla Cretica herbacea, flore parvo purpuraſcente. Tourn. Cor. 44.
8. CORONILLA (*Orientalis*) herbacea leguminibus numeroſis, radiatis, craſſioribus, articulatis, foliolis ſubtus glaucis. *Herbaceous Coronilla with many thick jointed pods diſpoſed like rays, and ſmaller leaves of a ſea-green on their under ſide.* Coronilla orientalis herbaceo, flore magno luteo. Tourn. Cor. 44.
9. CORONILLA (*Juncea*) fruticoſa, foliis quinatis ternatiſque lineari-lanceolatis ſubcarnoſis obtuſis. Lin. Sp. 1047. *Shrubby Coronilla with five and trefoil linear, ſpear-ſhaped leaves, which are obtuſe and fleſhy.* Doricum luteum Hiſpanicum carnoſius. Barrel. Icon. 133.
10. CORONILLA (*Scandens*) caule hirſuto, volubili, foliolis quinis ovatis, floribus binis, erectis, axillaribus, leguminibus erectis, villoſis. *Coronilla with a twining hairy ſtalk, five oval leaves, two flowers growing erect on the ſides of the branches, and upright hairy pods.* Coronilla ſcandens pentaphylla. Plum. Cat. 19. *Climbing five-leaved Coronilla.*

The firſt ſort is an humble ſhrub, which ſeldom riſes more than two or three feet high, with a ligneous branching ſtalk, garniſhed cloſely with winged leaves, each being generally compoſed of five pair of ſmall leaves (or lobes) terminated by an odd one; theſe are narrow at their baſe, and broad at the top, where they are roundiſh and indented; they are of a ſea-green colour, and continue all the year. The flowers are produced on ſlender foot-ſtalks from the wings of the leaves, on the upper part of the branches, ſeveral ſtanding together in a roundiſh bunch; they are of the butterfly, or Pea-bloom kind, and of a bright yellow colour, having a very ſtrong odour, which to ſome perſons is agreeable, but to others the contrary. This flowers in April and May, and the ſeeds ripen in Auguſt.

This plant is propagated by ſowing the ſeeds in the ſpring, either upon a gentle hot-bed, or on a warm border of light freſh earth; and when the plants are come up about two inches high, they ſhould be tranſplanted either into pots, or a bed of good rich earth, at about four or five inches diſtance every way, where they may remain until they have obtained ſtrength enough to plant out for good; which ſhould be either into pots filled with good freſh earth, or a warm ſituated border; in which, if the winter is not too ſevere, they will abide very well, provided they are in a dry ſoil.

The ſecond ſort is a ſhrub of the ſame ſize with the firſt, from which it differs in the number of ſmall leaves (or lobes) on each midrib; theſe having nine or eleven, and are of a ſilver colour, but the flowers and pods are the ſame. It flowers at the ſame time, and requires the ſame treatment as the former.

The third ſort is a ſhrubby plant, riſing four or five feet high; the ſtalks are ſhrubby garniſhed with winged leaves, compoſed of many ſmall oval lobes along the midrib by pairs, and ending in an odd one. The flowers ſtand upon long foot-ſtalks, which ariſe from the ſide of the branches; they are yellow, and grow together in cloſe bunches. This flowers in winter and ſpring, and the ſeeds are ripe in Auguſt.

This is a perennial ſhrubby plant, which is propagated by ſeeds; they may be ſown on a bed of light earth in April, and when the plants are fit to tranſplant, ſome of them ſhould be planted in a warm border, cloſe to a warm wall or pale, to which the branches ſhould be trained; obſerving to ſhade them from the ſun till they have taken freſh root, and alſo to refreſh them with water when they require it. After they are well rooted, they will require no other culture but to keep them clean from weeds, and faſten their branches to the wall; the next year they will flower, and if they are on a dry ſoil and in a warm ſituation, they will continue many years. Some of theſe plants ſhould be put into pots, that they may be removed into ſhelter in winter; where, if they are not too tenderly treated, they will flower great part of that ſeaſon; but theſe will rarely produce ſeeds, whereas thoſe in the full ground generally do, provided they are covered with mats in froſty weather.

The fourth ſort is nearly like the firſt, but hath fewer pinnæ on each midrib. The flowers are larger, and have little ſcent. The pods and ſeeds are much larger, and the plants are not quite ſo hardy. This flowers in May and June, but rarely perfects ſeeds in England; it requires the ſame treatment as the firſt, but in winter the plants ſhould be ſheltered, otherwiſe hard froſts will deſtroy them.

The fifth ſort is a low trailing plant with ſhrubby ſtalks, which ſpread near the ground, garniſhed with winged leaves, compoſed of many pair of ſmall lobes placed along the midrib, terminated by an odd one; theſe are oval, and of a bright green; the flowers ſtand upon long foot-ſtalks in cloſe bunches, they are yellow, and without ſcent. It flowers in May, and the ſeeds ripen in autumn. This is propagated by ſeeds in the ſame manner as the third, and requires the ſame treatment.

The ſixth ſort dies down every winter, but riſes again the ſucceeding ſpring; the ſtalks of this riſe to the height of five or ſix feet, where they have ſupport; otherwiſe they trail on the ground, and are garniſhed with winged leaves, compoſed of ſeveral oblong ſmall pinnæ, which are ſometimes placed by pairs, and at other times are alternate, ending in a ſingle one, they

are of a deep green. The flowers come out on long foot-ſtalks from the wings of the leaves, many growing together in round bunches; they are variable from a deep to a light purple, mixed with white, and are ſucceeded by ſlender pods from two to three inches long, ſtanding erect. This plant flowers in June, July, and Auguſt, and the ſeeds ripen in autumn. The roots of this plant creep very far under ground, by which the plant increaſes greatly; which, when permitted to remain unremoved for two or three years, will ſpread and overbear what plants grow near it; for which reaſon the roots ſhould be confined, and it ſhould be planted at a diſtance from any other plants; it will grow in almoſt any ſoil and ſituation, but thrives beſt in a warm ſunny expoſure, in which the flowers will alſo be much fairer, and in greater quantities. This plant was formerly cultivated to feed cattle.

The ſeventh ſort hath an herbaceous ſtalk, which riſes two feet high, garniſhed with winged leaves, compoſed of ſix pair of ſmall leaves, placed along the midrib, which is terminated by an odd one; theſe are larger than thoſe of the ſixth ſort, and broader at the top. The foot-ſtalks of the flowers come out from the ſide of the ſtalks, but they are ſhorter than thoſe of the ſixth ſort, and ſuſtain ſmaller heads of flowers, which are ſucceeded by five taper jointed pods, near two inches long.

This is an annual plant, which grows naturally in the Archipelago, from whence Tournefort ſent the ſeeds to the royal garden at Paris. The ſeeds of this ſort ſhould be ſown on a bed of light earth in the ſpring, where the plants are deſigned to remain, and when the plants come up, they ſhould be thinned where they are too cloſe, and afterward kept clean from weeds, which is all the culture they will require. In June they will flower, and the ſeeds ripen in autumn.

The eighth ſort was diſcovered by Dr. Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris; this hath a perennial root, and an annual ſtalk, which riſes upward of two feet high, ſtanding erect. The leaves are compoſed of five or ſix pair of ſmall oblong leaves, ranged along the midrib, which is terminated by an odd one. The foot-ſtalks of the flowers are ſtrong, and upward of ſix inches in length, ſupporting large bunches of yellow flowers, which are ſucceeded by ſhort thick pods about an inch long. This flowers in June and July, and in warm ſeaſons the ſeeds will ripen in autumn: there is a variety of this with large white flowers.

This ſort is propagated by ſeeds, which ſhould be ſown on a warm border of light earth in the ſpring; and when the plants come up, they muſt be carefully cleaned from weeds; when they are fit to remove, they ſhould be tranſplanted into a warm border, where they are to remain, ſhading them from the ſun till they have taken freſh root, after which they will require no farther care in ſummer, but to keep them clean from weeds; and in autumn, when the ſtalks are decayed, if the ſurface of the ground is covered with ſome old tan to keep out the froſt, it will be a ſecure method to preſerve the roots. The ſecond year the plants will flower, and, if the ſame care is taken in winter, the roots may be continued ſome years.

The ninth ſort grows naturally in Spain; this riſes from two to four feet high, having many ſlender ligneous branches, garniſhed with narrow ſpear-ſhaped leaves, which are ſometimes trifoliate, and at other times have five lobes on each foot-ſtalk; the flowers ſtand upon pretty long foot-ſtalks, which come out from the wings of the ſtalk, and are collected in ſmall bunches; they are of a bright yellow colour, and appear for ſix or ſeven months together, but have not been ſucceeded by ſeeds here as yet.

This is propagated by ſeeds in the ſame manner as the firſt ſort, and ſome of the plants ſhould be planted in pots that they may be ſheltered under a common frame in winter, becauſe in hard froſts the plants are often deſtroyed; but in mild weather they ſhould be expoſed to the air, otherwiſe they will draw up weak.

The tenth ſort was diſcovered by father Plumier in America. I received the ſeeds of this plant from Carthagena, which were ſent me by my late ingenious friend Dr. William Houſtoun; this hath a ſlender, hairy, twining ſtalk, of a brown colour, twiſting round any of the ſhrubs which ſtand near it, whereby it riſes eight or ten feet high, and is garniſhed with winged leaves, for the moſt part compoſed of five oval lobes, one inch long, and half an inch broad, of a deep green. The flowers come out by pairs at each joint, ſtanding on very ſhort ſeparate foot-ſtalks erect; they are large, and of a pale yellow; theſe are ſucceeded by taper jointed pods, more than three inches long, which are covered with ſhort, ſoft, white, hairy down, and ſtand erect. This plant is propagated by ſeeds, which ſhould be ſown early in the ſpring on a moderate hot-bed; and when the plants are come up, they ſhould be each tranſplanted into a halfpenny pot filled with freſh rich earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them until they have taken root; after which time they ſhould have air and water in proportion to the warmth of the ſeaſon, and when they have filled theſe pots with their roots, they ſhould be ſhifted into pots of a larger ſize, and plunged into the hot-bed again, where they muſt remain until autumn, when they ſhould be removed into the ſtove, and plunged into the tan. Theſe plants muſt be conſtantly kept in the bark-ſtove, and placed among plants which require a moderate heat; where they will thrive and flower, and ſhould be ſupported by tall ſticks, round which they will twine as Hops do; for if they have not this ſupport, they will twiſt round other plants and ſpoil them. Theſe are very proper plants to place againſt an eſpalier on the back part of the ſtove, amongſt other climbing plants, where they will make an agreeable variety.

If the plants are carefully managed in the winter, they may be preſerved two or three years, and will annually flower in July, and ſometimes they will produce ripe ſeeds in England.

CORONOPUS. See PLANTAGO.

CORTUSA. Lin. Gen. Plant. 181. [This plant is ſo called from Cortuſus, a famous botaniſt, who firſt brought it into uſe.] Bears-ear Sanicle.

The CHARACTERS are,

The flower hath a ſmall, ſpreading, permanent empalement, which is indented at the brim in five parts; this hath one wheel-ſhaped petal, ſpreading open to the bottom, and cut into five parts at the brim, having five prominent tubercles at the baſe. It hath five ſhort obtuſe ſtamina, which are terminated by oblong erect ſummits. In the center is ſituated an oval germen, ſupporting a ſlender ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes an oval, oblong, pointed capſule, having two longitudinal furrows, and one cell, opening with two valves, filled with ſmall oblong ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CORTUSA (*Matthioli*) calycibus corollâ brevioribus. Lin. Sp. Plant. 144. *Bears Ear Sanicle, with an empalement ſhorter than the petal.* Cortuſa Matthioli. Cluſ. Hiſt. 1. p. 307. *Bears Ear Sanicle of Matthiolus.*
2. CORTUSA (*Gmelini*) calycibus corollum excedentibus. Amœn. Acad. 2. p. 340. *Bears Ear Sanicle with an empalement longer than the petal.*

The firſt ſort grows naturally on the Alps, and alſo on the mountains in Auſtria, and in Siberia. This plant ſends out many oblong ſmooth leaves, which are a little indented on the edges, and form a ſort of head, like the Auricula. The foot-ſtalks of the flowers come out in the center of the leaves; theſe riſe about four inches high, and ſupport an umbel of flowers, each ſitting on a ſlender, ſeparate, ſhort foot-

ſtalk;

ſtalk; they are of a fleſh colour, and ſpread open like thoſe of the Auricula. It flowers in April, but doth not produce ſeeds in the gardens, for this plant is with great difficulty kept in a garden. The only method by which I could ever preſerve it, has been by planting the plants in pots, and placing them in a ſhady ſituation, where they were duly watered in dry weather; in this place they conſtantly remained both ſummer and winter, for the cold will not deſtroy them; the earth for this plant ſhould be light, and not too rich, for dung is very injurious to it. As this very rarely produces any ſeeds in England, the only method to propagate it is, by parting the roots in the ſame manner as is practiſed for Auriculas; the beſt time for this is about Michaelmas, ſoon after which the leaves decay.

The ſecond ſort is very like the firſt, but the flowers are much leſs, and their empalements are larger; this grows naturally in Siberia, but is with great difficulty kept in a garden.

CORYLUS. Lin. Gen. Plant. 953. Tourn. Inſt. R. H. 581. [ſo called from Κόρυλος, *Gr.* a Hazel, or Filbert-tree. It is alſo called Avellana, from Avella, a town in Campania, where it grew in great plenty.] The Hazel, or Nut-tree.

The CHARACTERS are,

It hath male and female flowers growing at remote diſtances on the ſame tree. The male flowers are produced in long ſcaly katkins, each ſcale including a ſingle flower, having no petals, but eight ſhort ſtamina faſtened to the ſide of the ſcale, and terminated by oblong erect ſummits. The female flowers are included in the future bud, ſitting cloſe to the branches; theſe have a thick two-leaved perianthium, torn on the border, ſitting under the flower when it is ſmall, but afterward is enlarged to the ſize of the fruit; it hath no petal, but a ſmall round germen occupies the center, ſupporting two briſtly coloured ſtyles, which are longer than the empalement, crowned by two ſingle ſtigmas. The germen afterward becomes an oval nut, ſhaved at the baſe, and compreſſed at the top, ending in a point.

This genus of plants is ranged in the eighth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Polyandria, from there being male and female flowers on the ſame plant, and the male flowers having many ſtamina.

The SPECIES are,

1. CORYLUS (*Avellana*) ſtipulis ovatis obtuſis. Hort. Cliff. 448. *Hazel Nut with oval blunt ſtipulæ.* Corylus Sylveſtris. C. B. P. 418. *Wild Hazel Nut.*
2. CORYLUS (*Maxima*) ſtipulis oblongis, obtuſis, ramis erectioribus. *Hazel with oblong blunt ſtipulæ, and the branches growing more erect.* Corylus ſativa fructu oblongo. C. B. P. 418. *The Filbert.*
3. CORYLUS (*Colurna*) ſtipulis linearibus acutis. Hort. Cliff. 448. *Hazel with narrow acute ſtipulæ.* Corylus Byzantina. H. L. 191. *Byzantine Nut.*

The firſt of theſe trees is common in many woods in England, from whence the fruit is gathered in plenty, and brought to the London markets by the country people. This tree is ſeldom planted in gardens (except by perſons curious in collections of trees and ſhrubs;) it delights to grow on a moiſt ſtrong ſoil, and may be plentifully increaſed by ſuckers from the old plants, or by laying down their branches, which, in one year's time, will take ſufficient root for tranſplanting; and theſe will be much handſomer and better rooted plants than ſuckers, and will greatly outgrow them, eſpecially while young.

There is a variety of this with fruit growing in great cluſters at the end of the branches, which is diſtinguiſhed by the title of Cluſter Nut; but as this is ſuppoſed to be only a variety, which accidentally came from the other, I have not diſtinguiſhed it; however, this may be continued by layers, ſo the kind may always be preſerved.

The ſecond ſort is by many ſuppoſed to be only a ſeminal variety from the firſt, which hath been improved by culture; but this is very doubtful, for I have ſeveral times propagated both from the nuts, but never have found them vary from one to the other, though they have altered in the ſize and colour of their fruit, from the ſorts which were ſown; but as the ſhrubs of this grow more erect than thoſe of the other, and the ſtipulæ are different in their ſhape, ſo I have enumerated it as a diſtinct ſort; of this there are the red and white Filberts, both which are ſo well known, as to need no deſcription.

The third ſort grows naturally near Conſtantinople; the nuts of this are large, roundiſh, and in ſhape like thoſe of the common Hazel, but are more than twice their ſize. The cups in which the nuts grow are very large, ſo as almoſt to cover the nut, and is deeply cut at the brim. This ſort is not common in England, but I take thoſe large nuts which are annually imported from Barcelona in Spain, to be of the ſame kind, the nuts being ſo alike, as not to be diſtinguiſhed when out of their cups; and thoſe of the Spaniſh ſort come over naked, ſo I cannot with certainty ſay how they eſſentially differ.

All theſe ſorts may be propagated by ſowing their nuts in February; which, in order to preſerve them good, ſhould be kept in ſand in a moiſt cellar, where the vermin cannot come at them to deſtroy them nor ſhould the external air be excluded from them, which would occaſion their growing mouldy.

The manner of ſowing the ſeeds being well known to every one, I need not here mention it, eſpecially ſince it is not the ſureſt way to obtain the ſorts deſired; for they ſeldom prove ſo good as the nuts which were ſown, or at leaſt not one in four of them will; and the method of propagating them by layers being not only the ſureſt, but alſo moſt expeditious, is what I would recommend to every one who would cultivate theſe trees for the ſake of their fruits.

CORYMBIFEROUS PLANTS are ſuch as have a compound diſcous flower, but their ſeeds have no down adhering to them. The name is taken from the manner of bearing its flowers in cluſters, and ſpreading round in the form of an umbrella. Of this kind is the Corn Marigold, common Ox Eye, the Daiſy, Camomile, Mugwort, Feverfew, &c.

Mr. Ray diſtinguiſhes them into ſuch as have a radiated flower, as the Sun Flower, Marigold, &c. and ſuch as have a naked flower, as the Lavender Cotton and Tanſey, and alſo thoſe that are akin to them, as Scabious, Teaſel, Carduus, &c.

CORYMBIUM.

The CHARACTERS are,

It hath an empalement of two leaves, having ſix angles; the ſmall leaves are erect and cloſe together their whole length, and are triangular on their outſide, cut into three ſegments, and are permanent. The flower has one petal, which is equal, having a very ſhort tube, cut into five ſegments at the brim, which ſpread open; it hath five erect ſtamina ſitting within the tube, crowned with oblong erect ſummits, ſhorter than the petal, joining in a cylinder: the germen is ſituated within the empalement, at the bottom of the petal, ſupporting a ſingle erect ſtyle the length of the petal, terminated by a bifid oblong ſtigma; the germen afterward becomes an oblong ſeed, having a ſort of down adhering to it.

This genus of plants is ranged in the ſixth ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Monogamia, the flower having five ſtamina which join by their ſummits, and is ſucceeded by one ſeed.

We know but one SPECIES of this genus, viz.

CORYMBIUM (*Africanum*). Hort. Cliff. 494. *African Corymbium.* Bupleurifolia ſemine pappoſo, valerianoides umbellata, cauliculi ſcabro. Pluk. Alm. 73.

This plant grows naturally at the Cape of Good Hope; it riſes with an erect rough ſtalk about a foot high, with a ſingle leaf at each joint, which half embrace the ſtalk with their baſe. The leaves are long, narrow, and triangular, and have a downy ſubſtance intermixed with them at their baſe; the upper part of the ſtalk divides into ſeveral foot-ſtalks, which are terminated by purple flowers of one petal, cut into five parts at the brim, each being ſucceeded by an oblong ſeed.

It is propagated by ſeeds, which ſhould be ſown in a ſmall pot filled with light earth as ſoon as it is received from abroad; the pots ſhould be plunged into a bed of tanners bark, where the heat is near ſpent, and covered with a common frame in winter, to protect the ſeeds from froſt, ſnow, and hard rains. In the ſpring, if the pots are removed into a moderate hot-bed, the plants will ſoon appear: when they are about an inch high, they ſhould be each tranſplanted into a ſeparate ſmall pot, obſerving to ſhade them until they have got new roots; ſoon after which they ſhould be gradually inured to the open air, and in June they ſhould be placed abroad in a ſheltered ſituation; where they may remain till October, when they ſhould be placed in a common frame, where they may be protected from froſt, being too tender to live abroad in England.

CORYMBUS [Κόρυμβος, *Gr.*] ſignifies among botaniſts, round cluſters of berries, as thoſe of Ivy.

Jungius uſes it to ſignify the extremity of a ſtalk, ſo ſubdivided and laden with flowers, or fruits, as to compoſe a ſpherical figure.

It is alſo by modern botaniſts uſed to ſignify a compound diſcous flower, which does not fly away in down, as the Chryſanthemum, Daiſy, Chryſocome, &c. For theſe kind of flowers, being ſpread into breadth, do, after a ſort, reſemble an umbrella, or bunch of Ivy-berries.

COSTUS. Lin. Gen. Plant. 3.

The CHARACTERS are,

It hath a ſimple ſpadix and ſpathæ, with a ſmall empalement, divided into three parts, ſitting on the germen. The flower hath three concave petals, which are erect and equal, with a large oblong nectarium of one leaf, having two lips, the lower being broad, and as long as the petal. The upper is ſhorter and ſpear-ſhaped, changing to a ſtamina; this is faſtened to the upper lip of the nectarium, to which adheres a bipartite ſummit. The germen is ſituated within the receptacle of the flower, which is roundiſh, ſupporting a ſlender ſtyle, crowned by a compreſſed indented ſtigma. The germen afterward becomes a roundiſh capſule with three cells, containing ſeveral triangular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's firſt claſs, intitled Monandria Monogynia, the flower having but one ſtamen and one ſtyle.

We have but one SPECIES of this plant, viz.

COSTUS (*Arabicus*). Hort. Cliff. 2. Coſtus Arabicus. C. B. P. 36. *Arabian Coſtus.*

This hath a fleſhy jointed root like that of Ginger, which propagates under the ſurface as that doth; from which ariſe many round, taper, herbaceous ſtalks, garniſhed with oblong ſmooth leaves, embracing the ſtalks like thoſe of a Reed; theſe ſtalks riſe near two feet high; out of the center, the club, or head of flowers is produced, which is near two inches long, the thickneſs of a man's finger, and blunt at the top, compoſed of ſeveral leafy ſcales, out of which the flowers come; theſe have but one thin white petal, which is of ſhort duration, ſeldom continuing longer than one day before it fades, and is never ſucceeded by ſeeds in this country. The time of its flowering is very uncertain, for ſometimes it flowers late in the winter, and at other times it has flowered in ſummer, ſo is not conſtant to any ſeaſon in England. It grows naturally in moſt parts of India. This is propagated by parting of the roots; the beſt time for doing this is in the ſpring, before the roots put out new ſtalks. The roots muſt not be divided too ſmall, becauſe that will prevent their flowering. They ſhould be planted in pots, filled with light kitchen-garden earth, and plunged into the tan-bed in the ſtove, where they ſhould conſtantly remain, and may be treated in the ſame manner as the Ginger, which is fully treated of under the article AMOMUM.

The roots of this plant were formerly imported from India, and were much uſed in medicine; but of late years they have not been regarded, the roots of Ginger being generally ſubſtituted for theſe.

COTINUS. See RHUS.

COTONEA MALUS. See CYDONIA.

COTONEASTER. See MESPILUS.

COTULA. Lin. Gen. Plant. 868. Ananthocyclus. Vaill. Act. Reg. Scien. 1719. Mayweed.

The CHARACTERS are,

It hath a flower compoſed of hermaphrodite florets in the diſk, and female half florets which form the rays; theſe are included in one common convex empalement, divided into ſeveral oval parts. The hermaphrodite florets are tubular, and cut into four unequal ſegments at the top; theſe have four ſmall ſtamina, terminated by tubular ſummits, and have two obtuſe ſtigmas, having one ſmall, oval, angular ſeed to each. The female half florets have an oval compreſſed germen, ſupporting a ſlender ſtyle, crowned by two ſtigmas, but have no ſtamina; theſe are ſucceeded by ſingle heart-ſhaped ſeeds, plain on one ſide, and convex on the other, with an obtuſe border.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua; the plants of this ſection have hermaphrodite and female flowers, which are fruitful.

The SPECIES are,

1. COTULA (*Anthemoides*) foliis pinnato-multifidis, corollis radio deſtitutis. Hort. Cliff. 417. *Mayweed with many pointed winged leaves, and no rays to the flower.* Chamæmelum luteum capite aphyllo. C. B. P. 135.
2. COTULA (*Turbinata*) receptaculis ſubtus inflatis, turbinatis. Hort. Cliff. 417. *Mayweed whoſe receptacles are ſwollen and turbinated beneath.* Cotula Africana calice eleganter cæſio. Tourn. Inſt. R. H. 495.
3. COTULA (*Coronopi folia*) foliis lanceolato-linearibus, amplexicaulibus pinnatifidis. Hort. Cliff. 417. *Mayweed with narrow ſpear-ſhaped leaves embracing the ſtalk, having many points.* Chryſanthemum exoticum minus, capite aphyllo, Chamæmeli nudi facie. Breyn. Cent. 156.

The firſt ſort grows naturally in Spain, Italy, and the Archipelago; this is an annual plant, which riſes with a branching ſtalk half a foot high, garniſhed with leaves which are finely divided like thoſe of Chamomile. The flowers are produced ſingly at the end of the branches, which are very like thoſe of the naked Chamomile, but the heads riſe higher in the middle like a pyramid. This flowers in May and June, and the ſeeds ripen in Auguſt. If the ſeeds of this ſort are permitted to ſcatter, the plants will come up in the ſpring, and require no other care but to keep them clean from weeds, and thin the plants where they are too cloſe.

The ſecond ſort grows naturally at the Cape of Good Hope, from whence I have received the ſeeds; this is an annual plant, ſending out many branching ſtalks from the root, which ſpread on the ground, and are garniſhed with very fine divided leaves, covered with a lanugo, or cotton. The flowers are produced ſingly upon long foot-ſtalks, ariſing from the ſide of the branches; theſe have a narrow border of white rays, with a pale yellow diſk. It flowers in June and July, and the ſeeds ripen in autumn. This ſort muſt be raiſed on a moderate hot-bed in the ſpring, and when the plants have obtained ſtrength, they may be tranſplanted into a warm border, where they will ripen their ſeeds very well.

The third ſort is an annual plant, which ſends out trailing ſtalks about ſix inches long, garniſhed with ſucculent leaves, in ſhape like thoſe of Buckſhorn Plantain. The flowers grow from the diviſions of the ſtalks upon ſhort weak foot-ſtalks, being deſtitute of rays; they are of a ſulphur colour, and appear about the ſame time with the former. If the ſeeds of this ſort are ſown on a warm border where the plants are to remain, they will require no other culture but to keep them clean from weeds. The flowers of the two laſt ſorts ſtand erect, when they firſt appear, but ſo ſoon as the florets are impregnated, and their colour changes, the foot-ſtalks become very flaccid toward the top, and the flowers hang downward; but when the ſeeds are ripe, the foot-ſtalks become

ſtiff,

ſtiff, and the heads ſtand erect for the winds to diſperſe the ſeeds.

COTYLEDON. Lin. Gen. Plant. 512. Tourn. Inſt. R. H. 90. tab. 19. [Κοτυληδῶν, *Gr.* of Κοτυλη, *Gr.* a cavity; becauſe the leaves of this are hollowed like the navel, or becauſe it reſembles a veſſel wherewith the ancients uſed to draw water.] Navelwort.

The CHARACTERS are,

The flower hath a ſmall empalement of one leaf, divided into five parts at the top. It hath one funnel-ſhaped petal, cut into five parts at the brim, which turn backward. It hath five germina, which have each a ſquamous concave nectarium at their baſe, and each ſuſtains a ſtyle, crowned by a ſingle ſtigma; theſe are attended by ten erect ſtamina, which are terminated by erect ſummits, having four furrows. The germen afterward become ſo many oblong ſwelling capſules, opening longitudinally, with one valve, filled with ſmall ſeeds.

This genus of plants is ranged in the fourth ſection of Linnæus's tenth claſs, intitled Decandria Pentagynia, the flower having ten ſtamina and five ſtyles.

The SPECIES are,

1. COTYLEDON (*Umbilicus*) foliis cuculato-peltatis, ſerrato-dentatis, alternis, caule ramoſo, floribus erectis. Lin. Sp. Plant. 429. *Navelwort with hooded leaves ſharply indented, growing alternate, and a branching ſtalk with erect flowers.* Cotyledon major. *Greater Navelwort.* Umbilicus Veneris. Cluſ. H.
2. COTYLEDON (*Spinoſa*) foliis oblongis ſpinoſo-mucronatis, caule ſpicato. Lin. Sp. Plant. 429. *Navelwort with oblong pointed leaves, ending with a ſpine, and a ſpiked ſtalk.*
3. COTYLEDON (*Serrata*) foliis ovalibus, crenatis, caule ſpicato. Lin. Sp. Plant. 429. *Navelwort with oval crenated leaves and a ſpiked ſtalk.* Cotyledon Cretica, folio oblongo, fimbriato. Hort. Elth. 113. tab. 95. *Navelwort of Crete, with an oblong fringed leaf.*
4. COTYLEDON (*Hemiſpherica*) foliis ſemigloboſis. Hort. Cliff. 176. *Navelwort with ſemiglobular leaves.* Cotyledon Capenſis, folio ſemiglobato. Hort. Elth. 112. tab. 94.
5. COTYLEDON (*Orbiculata*) foliis ſubrotundis, planis integerrimis. Hort. Cliff. 276. *Navelwort with roundiſh, plain, entire leaves.* Sedum Africanum fruteſcens, incanum, orbiculatis foliis. H. L. 349.
6. COTYLEDON (*Ramoſiſſimo*) caule ramoſiſſimo, foliis rotundis, planis, marginibus purpureis. *Navelwort with a very branching ſtalk, and round, plain, hairy leaves, with purple edges.*
7. COTYLEDON (*Arboreſcens*) caule ramoſo, ſucculento, foliis obverſè ovatis, emarginatis, marginibus purpureis. *Navelwort with a branching ſucculent ſtalk, and obverſe oval leaves, which are indented at the top, and have purple borders.* Cotyledon major, arboreſcens Afra, foliis orbiculatis, glaucus, limbo purpureo, & maculis viridibus ornatis. Boerh. Ind. alt. 1. p. 287.
8. COTYLEDON (*Ovata*) caule ramoſo, ſucculento, foliis ovatis, planis, acuminatis oppoſitis ſemiamplexicaulibus. *Navelwort with a ſucculent branching ſtalk, and oval, plain, pointed leaves growing oppoſite, which half embrace the ſtalk.*
9. COTYLEDON (*Spuria*) foliis alternis ſpatulatis carnoſis integerrimis. Lin. Sp. 614. *Navelwort with ſpatule-ſhaped leaves.* Cotyledon Africana fruteſcens, folio longo & anguſto, flore flaveſcente. Com. Rar. Plant. 23. tab. 23.
10. COTYLEDON (*Laciniata*) foliis laciniatis, floribus quadrifidis. Hort. Cliff. 175. *Navelwort with cut leaves, and four-pointed flowers.* Cotyledon Afra, folio craſſo lato laciniato, floſculo aureo. Boerh. Ind. alt. 288.

The firſt ſort, which is that uſed in medicine, grows upon old walls and buildings in divers parts of England, particularly in Shropſhire and Somerſetſhire; in both which counties it greatly abounds upon old buildings, and on rocky places, but is not often found wild near London, nor often cultivated in gardens. This hath many round ſucculent leaves, whoſe foot-ſtalks are placed almoſt in the center, ſo as to reſemble a target. They are alternately ſawed on their edges, which frequently turn inward; the upper ſurface of the leaves are hollow in the middle, where the foot-ſtalks are joined on the lower ſide, ſo as to reſemble a navel, from whence the plant was titled Navelwort. From between the leaves ariſe the foot-ſtalks of the flowers, which in ſome places grow near three feet high, and in others not more than ſix inches, their lower part being garniſhed with leaves, and their upper part with flowers, which ſtand cloſe to the ſide of the branches, and grow erect; they are of a whitiſh yellow colour, and appear in June. It requires a dry rubbiſhy ſoil, and to have a ſhady poſition. This is a biennial plant, ſo that after it has perfected ſeed, the plant decays; but if the ſeeds are ſcattered on walls and old buildings as ſoon as it is ripe, or if the ſeeds are permitted to fall upon ſuch places, the plants will come up, and thrive much better than when they are ſown in the ground; and when once the plants are eſtabliſhed upon an old wall or building, they will ſow their ſeeds, and maintain their place better than when cultivated with more care.

The ſecond ſort grows naturally in Siberia, from whence it was brought to the imperial garden at Peterſburgh. This was ſent me by Dr. Amman, the late profeſſor of botany in that garden. It is a low plant, in ſhape like the Houſleek, but the leaves are longer, and terminate in ſoft ſpines. The flower-ſtalks riſe about four inches high, and ſupport four or five whitiſh flowers, which are cut at the brim into five parts. Theſe appear in April, and are ſometimes ſucceeded by ſeeds in England. This ſort requires a very ſhady ſituation, for if it is expoſed to the ſun in ſummer, the plants will ſoon decay. It is propagated by offsets like the Houſleek, and requires a pretty ſtrong ſoil.

The third ſort grows naturally in the Levant. This hath a fibrous root, from which is produced a ſingle upright ſucculent ſtalk, garniſhed with oblong, thick, ſucculent leaves, placed alternate, which are ſawed on their edges. The upper part of the ſtalk is garniſhed with purpliſh flowers, growing in a looſe ſpike, two or three being joined on the ſame foot-ſtalk, which is very ſhort. The flowers appear in June, and the ſeeds ripen in autumn. It is a biennial plant, which decays ſoon after the ſeeds are ripe. If this ſort is ſown upon a wall, it will thrive better than in the ground, and be leſs liable to ſuffer by froſt; ſo that where the ſeeds ſcatter themſelves in ſuch ſituations, the plants thrive better than when they are cultivated.

The fourth ſort grows naturally at the Cape of Good Hope. This hath a thick ſucculent ſtalk, which rarely riſes above a ſpan high, dividing into many branches, garniſhed with ſhort, thick, ſucculent leaves, which are very convex on their under ſide, but plain on their upper, not more than half an inch long, and a quarter broad, of a grayiſh colour ſpotted over with ſmall green ſpots, and ſit cloſe to the branches: the foot-ſtalks of the flower riſe from the top of the branches, and are ſix inches long, naked, and ſupport five or ſix flowers, which come out alternate from the ſide, ſitting very cloſe to the ſtalks; they are tubular, and cut into five parts at the top; theſe are greeniſh, with purple tips. It flowers in June and July, but never produces ſeeds in England.

The fifth ſort grows naturally upon dry gravelly ſpots at the Cape of Good Hope. It hath a thick ſucculent ſtalk, which by age becomes ligneous, and riſes three or four feet high, ſending out crooked branches, which grow irregular, garniſhed with thick, fleſhy, ſucculent leaves about two inches long, and near as wide toward the top; they are narrow at their baſe, and rounded at the top, of a ſea-green colour, with a purple edge, which is frequently irregularly indented. The flowers grow upon thick ſucculent foot-ſtalks, which ariſe from the end of the branches, and are near a foot long, naked, and ſupporting eight or ten flowers, growing in an irregular umbel at the top; theſe are of a pale yellow colour, having long tubes, which hang downward, cut into five parts at the brim, which turn backward, the ſtamina and ſtyle being longer than

than the tube of the flower, hanging downward. This ſort flowers in July, Auguſt, and September, but doth not ripen ſeeds in England.

The ſixth ſort is alſo a native of the Cape of Good Hope. This hath a ſhort, thick, ſucculent ſtalk, which rarely riſes more than a foot high, branching out on every ſide, ſo as to ſpread over the pots in which they are planted: they become woody by age, and are cloſely garniſhed with thick round leaves, of a grayiſh colour, with purple borders, plain on their upper ſide, but convex on their under, and very fleſhy, of an herbaceous colour within, and full of moiſture. This ſort hath not flowered in England, ſo far as I can learn, for I have kept plants of it which were twenty years old, but never attempted to flower. It is undoubtedly a different ſort from the former, although they have been ſuppoſed to be the ſame by ſome writers.

The ſeventh ſort is ſomewhat like the ſixth, but the ſtalks riſe higher, the leaves are much larger, and ſhaped more like thoſe of the fifth, but are ſpotted on their upper ſide with great numbers of dark green ſpots; they have a deep border of purple on their edges, and ſit cloſe to the branches. This hath not as yet flowered in England. This is alſo a native of Æthiopia.

The eighth ſort hath been of late years introduced into the gardens in Holland, from the Cape of Good Hope, where it grows naturally, and was ſent me by Dr. Adrian Van Royen, late profeſſor of botany at Leyden. This riſes with a ſucculent ſtalk near three feet high, which divides into many branches, growing erect, garniſhed with oval ſucculent leaves, placed oppoſite; they are of a lively green, and end in points, and half embrace the ſtalks with their baſe. This ſort hath not as yet produced any flowers in England.

The ninth ſort grows on rocky places at the Cape of Good Hope, from whence it was firſt brought to the gardens in Holland, and hath ſince been ſpread into moſt parts of Europe, where there are curious perſons who preſerve exotic plants in their gardens: this hath a ſhort, greeniſh, ſucculent ſtalk, which ſeldom riſes more than a ſpan high, dividing into ſeveral irregular branches, garniſhed with thick ſucculent leaves four inches long, and half an inch broad, and as much in thickneſs, having a broad concave furrow on their upper ſide, running almoſt their whole length, and are convex on their under ſide, of a bright green, with a purple tip. The foot-ſtalks of the flowers are produced at the end of the branches, and riſe near a foot high, having here and there an oblong pointed leaf, growing on their ſide. The flowers ſtand upon ſhort foot-ſtalks, which branch out from the principal ſtem; theſe are yellow, having pretty long tubes, which are cut at the top into five parts, and are reflexed backward. The flowers of this ſort hang downward, and the ſtamina are longer than the tube of the flower; the reflexed parts of the petal are tipped with purple. Dr. Linnæus has ſuppoſed this to be the ſame with the fifth ſort, but whoever has ſeen both plants, cannot doubt of their being diſtinct ſpecies.

The tenth ſort grows naturally in the warm parts of Africa, ſo is much more tender than either of the other ſorts: this riſes with an upright ſtem about a foot high, which is jointed and ſucculent, garniſhed with broad leaves, which are deeply cut on their edges; they are of a grayiſh colour, placed oppoſite, and almoſt embrace the ſtalks with their baſe. The foot-ſtalks of the flowers ariſe from the end of the branches, which are about ſix inches long, ſuſtaining ſeven or eight ſmall flowers of a deep yellow colour, which are divided into four parts almoſt to the bottom. The ſtamina of theſe flowers are not longer than the ſhort tube. This flowers at different ſeaſons of the year, but never produces any ſeeds in England. This ſort requires a warm ſtove to preſerve it through the winter in England, nor ſhould it be expoſed abroad in ſummer; for if it receives much wet, the ſtalks are very ſubject to rot; ſo that it ſhould conſtantly remain either in the ſtoves, or in ſummer ſhould be placed in an airy glaſs-caſe with other tender ſucculent plants, where they may have free air in warm weather, and be ſcreened from cold and wet; but in autumn they muſt be removed into the ſtove, where they ſhould be kept in a moderate temperature of warmth: this is propagated by cuttings, which ſhould be taken off in ſummer, and planted into ſmall pots, and plunged into a moderate hot-bed, and when they have taken root, they ſhould be removed into the ſtove. This plant muſt have but little water, eſpecially in winter.

The African kinds are all of them propagated by planting cuttings in any of the ſummer months, which ſhould be laid in a dry place for a fortnight or three weeks after they are taken from the plant, before they are planted; for theſe abound with juice through every part of the plant, which will certainly rot the cuttings, if they are not ſuffered to lie out of the ground, that the wounded part may heal over, and the great redundancy of ſap evaporate. The ſoil in which theſe plants thrive beſt, is one third freſh light earth from a paſture, one third ſand, and the other third part lime-rubbiſh and rotten tan, in equal quantities; theſe ſhould be well mixed, and laid in a heap ſix or eight months before it is uſed, turning it over five or ſix times, that the parts may the better incorporate; and before it is uſed, it will be proper to paſs it through a ſcreen, to ſeparate the large ſtones, clods, &c. therefrom.

Having prepared the earth, and your cuttings being in a fit order for planting, you muſt fill as many half-penny pots with earth as you have cuttings to plant; then put one cutting in the middle of each pot about two or three inches deep or more, according to their ſtrength; then give them a little water to ſettle the earth cloſe about them, and ſet the pots in a warm ſhady place for about a week, to prepare the cuttings for putting forth roots; after which they ſhould be plunged into a moderate hot-bed of tanners bark, which will greatly facilitate their rooting; but obſerve to give them air, by raiſing the glaſſes at all times when the weather will permit, as alſo to ſhade the glaſſes in the heat of the day.

In about ſix weeks or two months time after planting, theſe cuttings will be rooted, when you muſt begin to expoſe them to the open air by degrees, firſt drawing the pots out of the tan, and ſetting them on the top, then raiſe the glaſſes very high in the day-time; and in about a week after remove the pots into a green-houſe, and there harden them for another week; after which they may be expoſed to the open air in a well defended place, obſerving not to ſet them into a place too much expoſed to the ſun, until they have been inured to the open air for ſome time.

In this place the plants may remain until the beginning of October, at which time you ſhould remove them into the conſervatory, placing them as near the windows as poſſible at firſt, letting them have as much free open air as the ſeaſon will permit, by keeping the windows open whenever the weather is good; and now you muſt begin to abate your waterings, giving it to them ſparingly; but you ſhould not ſuffer their leaves to ſhrink for want of moiſture, which is another extreme ſome people run into for want of a little obſervation; for when they are ſuffered to ſhrink for want of ſufficient moiſture to keep their veſſels diſtended, they are rendered incapable of diſcharging this moiſture whenever they receive it again. The tenth ſort ſhould be placed in a moderate ſtove in winter, nor muſt it be ſet abroad till Midſummer, for it is much tenderer than any of the others.

The beſt method to treat moſt of theſe plants is, to place them in an open, airy, dry glaſs-caſe, among Ficoideſſes and African Houſleeks, where they may enjoy as much of the ſun-ſhine as poſſible, and have a free, dry, open air; for if theſe are placed in a common green-houſe among ſhrubby plants, which perſpire freely, it will fill the houſe with a damp air,

which

which theſe ſucculent plants are apt to imbibe; and thereby becoming too replete with moiſture, often caſt their leaves, and many times their branches alſo decay, and the whole plant periſhes.

COURBARIL. See HYMENÆA.

COWSLIP. See PRIMULA.

CRAB-TREE. See MALUS.

CRAMBE. Lin. Gen. Plant. 739. Tourn. Inſt. R. H. 211. tab. 100. [Κραμβὴ, *Gr.*] Sea Cabbage.

The CHARACTERS are,

The empalement of the flower is compoſed of four oval concave leaves which ſpread open. The flower hath four petals, placed in form of a croſs, which are large, oblong, and ſpread open; it hath ſix ſtamina, two of which are the length of the empalement, the other four are longer, and bifid at their points; theſe are terminated by ſingle ſummits, which branch into threads on their outſide. The petals have honey glands on their inſide, which are longer than the ſtamina. It hath an oblong germen, but no ſtyle, crowned by a thick ſtigma. The germen afterward becomes a round dry capſule, with one cell, incloſing one roundiſh ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia ſiliquoſa, the flower having four long and two ſhort ſtamina, and the ſeeds growing in pods.

The SPECIES are,

1. CRAMBE (*Maritima*) foliis cauleque glabris. Fl. Suec. 570. *Sea Cabbage with ſmooth ſtalks and leaves.* Crambe maritima braſſicæ folio. Tourn. Inſt. 211.
2. CRAMBE (*Suecica*) foliis profundè laciniatis, caule erecto, ramoſo. *Sea Cabbage with leaves deeply cut, and an upright branching ſtalk.*
3. CRAMBE (*Orientalis*) foliis ſcabris, caule glabro. Lin. Sp. Plant. 671. *Sea Cabbage with rough leaves and a ſmooth ſtalk.* Crambe foliis & foliolis alternatim pinnatifidis. Prod. Leyd. 330.
4. CRAMBE (*Hiſpanica*) foliis cauleque ſcabris. Hort. Upſal. 193. *Sea Cabbage with rough ſtalks and leaves.* Rapiſtrum maximum rotundifolium monoſpermum. Corn. Canad. 147.

The firſt ſort ſends out many broad ſmooth leaves, which are deeply jagged on their ſides in obtuſe ſegments, and are of a grayiſh colour, ſpreading near the ground; between theſe ariſe a thick ſmooth foot-ſtalk about one foot high, which ſpreads out into many branches, which have at each joint one leaf of the ſame form as thoſe below, but much leſs; theſe foot-ſtalks ſubdivide again into many ſmaller, which are garniſhed with white flowers, growing in a looſe obtuſe ſpike, compoſed of four concave petals, placed in form of a croſs; theſe are ſucceeded by round dry ſeed-veſſels about the ſize of large Peaſe, having a ſingle ſeed in each. It flowers in June, and the ſeeds ripen in autumn. The roots of this ſort creep under ground, whereby it propagates very faſt.

The ſeeds of the ſecond ſort were ſent me from Peterſburgh for the firſt ſort, from which it differs greatly. This hath a perennial root, which ſends out ſeveral oblong, ſmooth, pointed leaves, irregularly cut on their ſides into acute ſegments almoſt to the midrib; theſe are very ſmooth, and of a ſea-green colour: between theſe ariſe the ſtalk, which grows three feet high, garniſhed below by oblong pointed leaves, which are acutely indented on their edges. The ſtalks branch out into many ſmaller, and theſe ſubdivide again into leſs, which are garniſhed with looſe ſpikes of white flowers like thoſe of the firſt ſort, which are ſucceeded by ſeeds of the ſame form. This differs greatly from the firſt in the ſhape of its leaves, which are longer, ending in points, and the ſegments do the ſame; whereas thoſe of the other are blunt, and not half ſo deeply cut. The ſtalks riſe more than twice the height of the firſt, branch out more, and the branches grow more erect; and theſe differences are conſtant, where the plants of both ſorts grow in the ſame ſoil.

The third ſort grows naturally in the Eaſt. This hath a biennial root, from which ariſe many leaves in the ſpring, that are alternately divided to the midrib; and theſe diviſions are again alternately cut on their edges into many points, ſo that they have the appearance of winged leaves, and are of a grayiſh colour. The ſtalks riſe about two feet high, and divide into many branches, which are terminated by looſe panicles of ſmall white flowers, placed in form of a croſs, which are ſucceeded by ſmall round capſules, each containing a ſingle ſeed. This flowers in June, and the ſeeds ripen in autumn, ſoon after which the roots decay.

The fourth ſort is an annual plant, which grows naturally in Spain and Italy. This riſes with a very branching ſtalk near three feet high, garniſhed with roundiſh heart-ſhaped leaves, indented on their edges, ſtanding upon long foot-ſtalks; the branches ſubdivide into many ſlender ones, which end in long looſe ſpikes of ſmall white flowers, which are ſucceeded by ſmall, round, dry ſeed-veſſels, which contain a ſingle ſeed. The leaves and ſtalks of this ſort are rough. It flowers in June, and the ſeeds ripen in autumn.

The firſt ſpecies is found wild upon ſea-ſhores in divers parts of England, but particularly in Suſſex and Dorſetſhire in great plenty, where the inhabitants gather it in the ſpring to eat, preferring it to any of the Cabbage kind; as it generally grows upon the gravelly ſhore, where the tide overflows it, the inhabitants obſerve where the gravel is thruſt up by the ſhoots of this plant, and open the gravel, and cut the ſhoots before they come out, and are expoſed to the open air, whereby the ſhoots appear as if they were blanched; and when they are cut ſo young, they are very tender and ſweet; but if they are ſuffered to grow till they are green, they become tough and bitter. This plant may be propagated in a garden, by ſowing the ſeed ſoon after it is ripe, in a ſandy or gravelly ſoil, where it will thrive exceedingly, and increaſe greatly by its creeping roots, which will ſoon overſpread a large ſpot of ground, if encouraged; but the heads will not be fit to cut until the plants have had one year's growth: and in order to have it good, the bed in which the plants grow, ſhould, at Michaelmas, be covered over with ſand or gravel about four or five inches thick, which will allow a proper depth for the ſhoots to be cut before they appear above ground; and if this is repeated every autumn, in the ſame manner as is practiſed in earthing of Aſparagus-beds, the plants will require no other culture. This may be cut for uſe in April and May, while it is young; but if the ſhoots are ſuffered to remain, they will produce fine regular heads of white flowers, which appear very handſome, and will perfect their ſeeds, by which they may be propagated.

The other ſorts are only preſerved in curious gardens of plants for variety, but are not of any uſe or beauty. The perennial ſorts may be propagated in the ſame manner as the firſt.

CRANE's-BILL. See GERANIUM.

CRANIOLARIA. Lin. Gen. Plant. 670. Martynia. Houſt. Gen.

The CHARACTERS are,

The flower hath a permanent empalement, compoſed of four ſhort narrow leaves which ſpread open, with a large ſwollen head, which is cut longitudinally on the ſide. The flower hath one petal, which is unequal, having a very long narrow tube, whoſe brim is divided into two lips; the upper being roundiſh and entire, but the under is divided into three parts, the middle ſegment being the largeſt. It hath four ſtamina, two of which are the length of the tube, and two are ſhorter; theſe are terminated by ſingle ſummits; at the bottom of the tube is ſituated an oval germen, ſupporting a ſlender ſtyle, crowned by an obtuſe thick ſtigma. The germen afterward becomes an oval leathery fruit, pointed at both ends, opening with two valves, incloſing a depreſſed woody nut, pointed at both ends, and recurved, having two or three furrows, ſo as to reſemble a ſkull, opening in two parts.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flowers having two long and

two ſhort ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. CRANIOLARIA (*Annua*) foliis cordatis, angulatis lobatis. Lin. Sp. Plant. 862. *Craniolaria with angular heart-ſhaped leaves.* Martynia annua, villoſa, & viſcoſa, aceris folio, flore albo, tubo longiſſimo. Houſt. MSS.

2. CRANIOLARIA (*Fruticoſa*) foliis lanceolatis dentatis. Lin. Sp. Plant. 618. *Craniolaria with ſpear-ſhaped indented leaves.* Geſnera arboreſcens amplo flore fimbriato & maculoſo. Plum. Nov. Gen. 27.

The firſt ſort was diſcovered in the neighbourhood of Carthagena in New Spain, by the late Dr. William Houſtoun, who ſent the ſeeds to England. This is an annual plant, which riſes with a branching ſtalk about two feet high; the branches come out oppoſite, which are hairy and viſcous; the leaves alſo are placed oppoſite, upon very long foot-ſtalks; theſe are of different ſhapes, ſome of them are divided into five lobes, others into three, and ſome are almoſt heart-ſhaped, ending in acute points; they are hairy and clammy. The flowers are produced from the ſide, and alſo at the end of the branches, ſtanding on ſhort foot-ſtalks, having an inflated ſheath or cover, out of which the tube of the flower ariſes, which is ſeven or eight inches long, and very ſlender; but at the top is divided into two lips, the under being large, divided into three broad ſegments, the middle being larger than the other two; the upper lip is roundiſh and entire: the flowers are ſucceeded by oblong fruit, having a thick dry ſkin, which opens lengthways, incloſing a hard furrowed nut, with two recurved horns. This is an annual plant, whoſe ſeeds muſt be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, filled with light freſh earth, and plunged into a moderate hot-bed, carefully ſhading them from the ſun till they have taken new root; after which they ſhould have free air admitted to them in proportion to the warmth of the ſeaſon, to prevent their drawing up weak, and afterwards treated in the ſame manner as other tender exotic plants, being too tender to thrive in the open air in England; ſo that when they are grown too large to remain under the frames, they ſhould be removed into the bark-ſtove, and plunged into the tan-bed, where they will flower in July, and with good management they often perfect their ſeeds in autumn. But the ſeeds of this plant ſhould remain on till they drop, otherwiſe they will not grow, for the outer covers of theſe ſeeds ſplit open and drop off like thoſe of the Almond, before the ſeeds are fully ripened.

The ſecond ſort grows naturally at the Havannah, and in ſome of the other iſlands in America. This riſes with a ſhrubby ſtalk to the height of ten or twelve feet, dividing upward into a few branches, which are garniſhed with ſpear-ſhaped leaves, cut on their edges; theſe are ſoft and hairy. The flowers are produced from the ſide of the branches, growing ſeveral together on the ſame foot-ſtalk; they are ſhaped like thoſe of the Foxglove, of a greeniſh yellow colour, with brown ſpots on the inſide; the flowers have a ſwelling tube, which is recurved, and the brim is ſlightly divided into five unequal ſegments. Theſe appear in July, but are not ſucceeded by ſeeds in England.

This ſort is propagated by ſeeds, which muſt be procured from the countries where it grows naturally, and ſhould be ſown on a hot-bed in the ſpring; when the plants are fit to remove, they ſhould be each planted into a ſeparate ſmall pot, filled with light kitchen-garden earth, and plunged into a freſh hot-bed, where they muſt be ſhaded from the ſun till they have taken freſh root; then they muſt have air admitted to them, according to the warmth of the ſeaſon, and frequently watered during the heat of ſummer. In autumn they muſt be removed into the bark-ſtove, and plunged into the tan-bed. During the winter ſeaſon, the plants ſhould not have much water, and may be treated in the ſame manner as other tender plants from thoſe countries. The plants ſeldom flower in England till the third year; and as they do not produce ſeeds here, it is with difficulty the ſort is preſerved in the European gardens, as there is no other method of propagating the plants but by ſeeds.

CRASSULA. Dillen. Hort. Elth. 114. Lin. Gen. Plant. 352. Leſſer Orpine, or Live-ever. This name was formerly applied to the Anacampſeros, or Orpine.

The CHARACTERS are,

The flower hath a five-leaved empalement. The corolla conſiſts of five narrow petals, which are joined at their baſe, are reflexed, and ſpread open at the brim. In the bottom of the tube are ſituated five nectarii, and there are five ſtamina ſituated round theſe, which ariſe from the bottom of the tube, and extend to the brim. At the bottom of the tube are placed five oblong pointed germina; after the flower is paſt, theſe become five capſules, opening lengthways, and filled with ſmall ſeeds.

This genus of plants is by Dr. Linnæus ranged in his fifth claſs of plants, and in the fifth diviſion, intitled Pentandria Pentagynia, which includes thoſe plants whoſe flowers have five ſtamina and five ſtyles.

The SPECIES are,

1. CRASSULA (*Coccinea*) foliis planis cartilagineo-ciliatis, baſi connato vaginantibus. Vir. Cliff. 26. *Leſſer Orpine with plain leaves, having ſtiff edges ſet with ſilver hairs, and their baſe ſurrounding the ſtalk like ſheaths.* Cotyledon Africana fruteſcens, flore umbellato Coccineo. Com. Rar. 24.

2. CRASSULA (*Perfoliata*) foliis lanceolato-ſubulatis ſeſſilibus connatis, canaliculatis, ſubtus convexis. Hort. Cliff. 116. *Leſſer Orpine with ſpear-ſhaped awl-faſhioned leaves, ſurrounding the ſtalks with their baſe, channelled on their upper ſide, and convex on their under.* Craſſula altiſſima perfoliata. Dill. Hort. Elth. 114.

3. CRASSULA (*Cultrata*) foliis oppoſitis, obtusè ovatis, integerrimis, hinc anguſtioribus. Hort. Cliff. 496. *Leſſer Orpine with oval blunt leaves placed oppoſite, which are entire, and narrow at their baſe.* Craſſula Anacampſerotis folio. Hort. Elth. 115. tab. 65.

4. CRASSULA (*Ciliata*) foliis oppoſitis, ovalibus, planiuſculis, diſtinctis, ciliatis, corymbis terminalibus. Hort. Cliff. 496. *Leſſer Orpine with oblong plain leaves placed oppoſite, which are bordered with ſilver hairs, and ſtalks terminated by a corymbus of flowers.* Craſſula cauleſcens, foliis ſempervivi cruciatis. Hort. Elth. 116. tab. 98.

5. CRASSULA (*Scabra*) foliis oppoſitis, patentibus, connatis ſcabris ciliatis, corymbis terminalibus. Lin. Sp. Plant. 283. *Leſſer Orpine with rough ſpreading leaves growing oppoſite.* Cotyledon Africana fruteſcens, foliis aſperis, anguſtis, acuminatis, flore vireſcente. Mart. Cent. 24.

6. CRASSULA (*Nudicaulis*) foliis ſubulatis, radicatis, caule nudo. Hort. Cliff. 116. *Leſſer Orpine with awl-ſhaped leaves which put out roots, and a naked ſtalk.* Craſſula Cæſpitoſa longifolia. Hort. Elth. 116. tab. 98.

7. CRASSULA (*Punctata*) caule flaccido, foliis connatis, cordatis, ſucculentis, floribus confertis terminalibus. *Leſſer Orpine with a weak ſtalk growing through the leaves, which are heart-ſhaped and ſucculent, and flowers growing in cluſters at the end of the branches.*

8. CRASSULA (*Fruticoſa*) foliis longis, teretibus, alternis, caule fruticoſo, ramoſo. *Leſſer Orpine with long taper leaves placed alternate, and a branching ſhrubby ſtalk.*

9. CRASSULA (*Sediodes*) caule flaccido, prolifero, determinatè-folioſo, foliis patentiſſimis, imbricatis. Hort. Cliff. 496. *Leſſer Orpine with a proliferous weak ſtalk, which is leafy, and leaves placed in the manner of tiles, and ſpreading open.* Sedum Afrum, ſaxatile, foliis ſedi vulgaris, in roſam verè compoſitis. Boerh. Ind. alt. 1. 287.

10. CRASSULA (*Pelucida*) caule flaccido repente, foliis oppoſitis. Lin. Sp. Plant. 283. *Leſſer Orpine with a weak creeping ſtalk, leaves placed oppoſite, and a ſhrubby ſucculent ſtalk.* Craſſula portulacæ facie repens. Hort. Elth. 119.

11. Crassula (*Portulacaria*) foliis obovatis, oppoſitis, caule arboreo. Lin. Sp. 406. *Leſſer Orpine with obverſe oval leaves placed oppoſite, and a tree-like ſtalk.* Craſſula portulacæ facie arboreſcens. Hort. Elth. 120. tab. 90.

The firſt ſort hath a round reddiſh ſtalk, which is jointed, riſing about three feet high, which divides upward into many irregular branches, garniſhed with oblong plain leaves placed oppoſite, having a griſtly border, ſet with ſmall ſilver hairs, and cloſely embrace the ſtalks with their baſe. The flowers are produced at the end of the branches in cloſe umbels, ſitting very cloſe to the end of the branches; theſe are funnel-ſhaped, having pretty long tubes cut at the top into five parts, which ſpread open; they are of a fine ſcarlet colour, and ſtand erect; the uſual time of their flowering is July or Auguſt. This is propagated by cuttings during any of the ſummer months; theſe ſhould be cut off about a fortnight before they are planted, and laid in a dry place that the wounded part may heal over; then they ſhould be each planted in a ſmall pot filled with light ſandy earth, and plunged into a moderate hot-bed, giving them but little water. In about ſix weeks theſe will have put out roots and begin to grow, when they ſhould have a large ſhare of air admitted to them, and muſt be gradually inured to bear the open air, into which they ſhould be removed, placing them in a ſheltered ſituation, where they may remain till autumn; when they muſt be removed into a dry airy glaſs-caſe, where they may enjoy the ſun as much as poſſible, and be ſcreened from the wet and cold. In warm dry weather, during the ſummer months while they are abroad, theſe plants ſhould be gently watered two or three times a week; but in winter they ſhould have very little water, leſt it rot their ſtems. Theſe plants require no artificial heat in winter, but they muſt be ſecured from froſt and wet.

The ſecond ſort will riſe with an upright ſtalk ten or twelve feet high, if it is not broken or injured, but it requires ſupport; for the ſtalks being ſlender, and the leaves very weighty, they are very ſubject to break, eſpecially if they are expoſed to the wind. The leaves of this plant are about three inches long; they are hollowed on the upper ſide, and have a convex ridge on their lower, and are placed oppoſite, ſurrounding the ſtalks with their baſe; theſe alternately croſs each other; they are very thick, ſucculent, and of a pale green colour, ending in acute points; at the top of the ſtalk the flowers are produced in large cluſters; they are of a whitiſh herbaceous colour, having ſhort tubes, which are cut into five parts at the brim, ſpreading open. The ſtalk which ſuſtains the flowers is pretty thick and ſucculent, generally turning firſt downward, and then upward again, almoſt in the form of a ſyphon. It flowers in July, but doth not produce ſeeds here. This ſort is propagated by cuttings in the ſame manner as the firſt, and the plants require the ſame treatment.

The third ſort riſes with a weak ſucculent ſtalk about two feet high, ſending out many irregular branches, garniſhed with oblong, oval, thick leaves, plain on their upper ſide, but convex below, of a deep green; their borders are ſet with a few ſilvery hairs. The ſtalk which ſupports the flowers riſes from the top of the branches, and is from four to ſix inches long, putting out ſeveral ſide branches, which grow erect; theſe are terminated by large cluſters of ſmall greeniſh flowers, which appear in June and July. This is propagated by cuttings in the ſame manner as the two former, but being pretty hardy, ſhould not be ſo tenderly treated; for if the cuttings of this are planted in a border of light earth, they will put out roots, and may afterward be taken up and potted, to be ſheltered in winter.

The fifth ſort hath a very weak ſucculent ſtalk, which riſes about a foot and a half high, dividing upward into ſmall branches, garniſhed with thin rough leaves which are flat, near two inches long, and a quarter broad at their baſe, gradually narrowing to a point; theſe are rough, placed oppoſite, and embrace the ſtalks with their baſe. The flowers come out in ſmall cluſters at the end of the branches; they are ſmall, and of an herbaceous colour, ſo make no figure; they appear in June and July. This may be propagated by cuttings, which may be treated in the ſame manner as the fourth ſort.

The ſixth ſort never riſes with a ſtalk, but the leaves come out cloſe to the ground, forming a ſort of head; they are taper, ſucculent, ending in points, and frequently put out roots; out of the center of theſe ariſe the flower-ſtalk, which grow about ſix inches high, branching into two or three ſhoots upward, each being terminated by cluſters of greeniſh flowers, which make no great appearance. It flowers in May, and ſometimes again in the latter part of ſummer.

This is propagated by taking off the heads, or ſide offsets, which ſhould be laid to dry three or four days before they are planted; then they may be treated in the ſame manner as the other hardier ſorts before-mentioned.

The ſeventh ſort hath been lately introduced to the gardens in Holland, from the Cape of Good Hope; it was ſent me by Dr. Adrian Van Royen, late profeſſor of botany at Leyden. This hath very ſlender ſtalks, which are full of joints, ſo trail upon the ground, unleſs they are ſupported, cloſely garniſhed with thick, ſucculent, heart-ſhaped leaves, placed oppoſite, which are cloſely joined at their baſe, ſo that the ſtalks run through them; they are of a grayiſh colour; the ſtalks are divided, and grow about eight or nine inches long, and are terminated by cluſters of ſmall white flowers, ſitting very cloſe to the top of the ſtalks; theſe appear in the ſpring, and alſo again in the latter part of ſummer. It is propagated by cuttings in the ſame manner as the other hardier ſorts, and may be treated in the ſame way.

The eighth ſort was ſent me from Leyden, by the gentleman before-mentioned; this riſes with a ſhrubby ſtalk four or five feet high, dividing into many branches, which at firſt are taper and ſucculent, but by age becomes ligneous; they are garniſhed with very ſlender, taper, ſucculent leaves, which are near three inches long, and are flaccid, generally turning downward, eſpecially in winter, when they are in the houſe; but as it hath not as yet flowered here, I can give no further deſcription of it. This is equally hardy with the former ſorts, and takes eaſily from cuttings, ſo may be treated in the ſame way as the former.

The ninth ſort is a low plant, with the appearance of Houſleek, having open ſpreading heads very like thoſe of ſome ſorts of Houſleek, which grow on the ends of very ſlender trailing ſtalks, which are produced in plenty on every ſide the parent plant, in like manner as the childing Marigold. The flower-ſtalks ariſe from the center of theſe heads, which are naked, about four inches long, and are terminated by cloſe cluſters of herbaceous flowers, which appear in different ſeaſons of the year. This plant propagates very faſt by the ſide heads, which come out from the parent plant, which frequently put out roots as they trail on the ground, ſo may be taken off and potted, during any of the ſummer months; this is equally hardy with the former ſorts, ſo the plants may be treated in the ſame way.

The tenth ſort hath very ſlender, trailing, ſucculent ſtalks, of a reddiſh colour, which put out roots at the joints as they lie upon the ground. The ſtalks and leaves of this ſort have the appearance of Purſlane, but trail upon the ground like Chickweed. The flowers are produced in ſmall cluſters at the end of the branches; theſe are white, with a bluſh of purple at their brim; they appear in ſummer at different times, and are often ſucceeded by ſeeds, which grow eaſily. This ſort is eaſily propagated by its trailing branches, and the plants require the ſame treatment as the other hardy ſorts, but unleſs they are often renewed will decay.

The eleventh ſort riſes with a very thick, ſtrong, ſucculent ſtalk to the height of three or four feet, ſending out

branches on every ſide, ſo as to form a kind of pyramid, the lower branches being extended to a great length, and the other diminiſhing gradually to the top; theſe are of a red or a purpliſh colour, and very ſucculent; they are garniſhed with roundiſh ſucculent leaves very like thoſe of Purſlane, from whence the gardeners have titled it the Purſlane-tree.

This ſort hath not flowered in England, though it has been many years in the gardens, ſo that we are not ſure if it is properly ranged in this genus; but from the outward appearance it ſeems to be nearly allied to ſome of the other ſpecies, on which account Dr. Dillenius has placed it here.

It is propagated with great facility by cuttings, which may be planted during any of the ſummer months; but theſe ſhould be laid to dry for ſome days before they are planted, that the wounded part may be healed over, otherwiſe they will rot. This ſort is ſomewhat tenderer than the four ſorts laſt mentioned, ſo muſt be placed in a warm glaſs-caſe in winter, where it may enjoy the full ſun, and ſhould have very little water during that ſeaſon. In ſummer the plants ſhould be placed abroad in a ſheltered ſituation, and in warm weather will require to be refreſhed with water twice a week; but as the ſtalks are very ſucculent, too much wet at any ſeaſon is very hurtful to theſe plants.

All the hardy ſorts of Craſſula may be treated in the ſame way as the Ficoides, and other hardier kinds of ſucculent plants, with this difference only, not to give them ſo much water; but the firſt, ſecond, and eleventh ſorts require to be placed in a warm dry glaſs-caſe in winter, and muſt not be ſo long expoſed abroad in the ſummer as the other ſpecies, nor ſhould have much water, eſpecially in the winter.

Theſe plants are preſerved in moſt curious gardens for the ſake of variety, which conſiſts more in the outward appearance of their plants, than in the beauty of their flowers, except the firſt ſort, whoſe flowers are of a beautiful ſcarlet, and grow in cloſe bunches at the end of the branches; ſo that when ſeveral of the branches are garniſhed with flowers at the ſame time, they make a fine appearance, and theſe flowers continue in beauty a long time; but the flowers of the other ſorts are ſmall, and moſt of them are of an herbaceous colour, ſo make no figure.

Dr. Dillenius, who firſt eſtabliſhed this genus, and ſeparated the ſpecies from Cotyledon, to which many of them had been joined by former botaniſts, made their difference to conſiſt in the ſhape of the flower; ſo that all the ſorts with long tubulous flowers of one leaf, he placed under the genus of Cotyledon, and thoſe whoſe flowers have five petals, he placed under this genus of Craſſula: but Dr. Linnæus makes their difference to conſiſt in the number of their ſtamina, ſo that all thoſe whoſe flowers have but five ſtamina, he ranges under the title of Craſſula, and thoſe which have ten ſtamina, he puts under that of Cotyledon; ſo that by his ſyſtem they are removed to a great diſtance from each other, and the firſt ſort here mentioned is brought from Cotyledon, with whoſe characters in every other reſpect it agrees, and is placed here.

CRATÆGUS. Tourn. Inſt. R. H. 633. Lin. Gen. Plant. 547. The Wild Service.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into five concave ſegments, which ſpread open. It hath five roundiſh concave petals, which are inſerted into the empalement, and many ſtamina, terminated by roundiſh ſummits, which are alſo inſerted in the empalement. The germen is ſituated under the flower, ſupporting two ſlender ſtyles, crowned with roundiſh ſtigmas. The germen afterward becomes an oval or roundiſh umbilicated berry, incloſing two oblong hard ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's twelfth claſs, intitled Icoſandria Digynia, the flower having twenty or more ſtamina, which are inſerted to the empalement, and two ſtyles.

The SPECIES are,

1. CRATÆGUS (*Aria*) foliis ovatis inæqualiter ſerratis, ſubtus tomentoſis. Hort. Cliff. 187. *Wild Service with oval leaves unequally ſawed, and woolly on their under ſide.* Cratægus folio ſubrotundo, ſerrato, ſubtus incano. Tourn. Inſt. R. H. 633. Aria Theophraſti, and in ſome countries, *The White Beam, or white Leaf-tree.*
2. CRATÆGUS (*Torminalis*) foliis cordatis ſeptangulis, lobis infimis divaricatis. Lin. Sp. Plant. 476. *Wild Service with heart-ſhaped leaves, having ſeven angles, whoſe lower lobes ſpread aſunder.* Cratægus folio laciniato. Tourn. Inſt. 633. *Wild, or Maple-leaved Service.*
3. CRATÆGUS (*Alpina*) foliis oblongo-ovatis ſerratis, utrinque virentibus. *Wild Service with oblong, oval, ſawed leaves, which are green on both ſides.* Cratægus folio oblongo, ſerrato, utrinque virenti. Tourn. Inſt. 633.
4. CRATÆGUS (*Coccinea*) foliis ovatis repando-angulatis ſerratis glabris. Hort. Cliff. 187. *Cratægus with oval, ſmooth, ſawed leaves, having angles.* Meſpilus ſpinoſa, ſc. oxyacantha Virginiana maxima. Tourn. Inſt. 633. *Commonly called Cockſpur Hawthorn.*
5. CRATÆGUS (*Crus Galli*) foliis lanceolato-ovatis ſerratis glabris, ramis ſpinoſis. Lin. Sp. 682. *Cratægus with oval, ſpear-ſhaped, ſawed leaves, and prickly branches,* Meſpilus aculeata pyrifolia denticulato ſplendens, fructu inſigni rutilo, Virginienſis. Pluk. Alm. 249. *Commonly called Virginian L'Azarole.*
6. CRATÆGUS (*Lucida*) foliis lanceolatis ſerratis lucidus, ſpinis longiſſimis, floribus corymboſis. *Cratægus with lucid, ſpear-ſhaped, ſawed leaves, very long ſpines, and flowers in a corymbus.* Meſpilus prunifolius, ſpinis longiſſimis fortibus, fructu rubro magno. Flor. Virg. 55.
7. CRATÆGUS (*Azarolus*) foliis obtuſis ſubtrifidis dentatis. Lin. Sp. 683. *Cratægus with obtuſe, trifid, indented leaves.* Meſpilus Apii folio laciniato. C. B. P. 453. *Commonly called L'Azarole.*
8. CRATÆGUS (*Oxyacantha*) foliis obtuſis ſubtrifidis ſerratis. Hort. Cliff. 188. *Cratægus with obtuſe, trifid, ſawed leaves.* Meſpilus Apii folio, ſylveſtris ſpinoſa, ſc. oxycantha. C. B. P. 454. *The common White Thorn.*
9. CRATÆGUS (*Tomentoſa*) foliis cuneiformi-ovatis ſerratis ſubangulatis ſubtus villoſis ramis ſpinoſis. Lin. Sp. 682. *Cratægus with oval, wedge-ſhaped, ſawed, angular leaves, hoary on their under ſide, and prickly branches.* Meſpilus Virginiana groſſulariæ foliis. Pluk. Phyt. 100. f. 1.

The firſt ſort grows naturally on the chalky hills in Kent, Surry, and Suſſex, and in ſome other parts of England, and riſes to the height of thirty or forty feet, with a large trunk, dividing upward into many branches; the young ſhoots have a brown bark, covered over with a meally down, garniſhed with oval leaves between two and three inches long, and one and a half broad in the middle, of a light green on their upper ſide, but very white on their under, having many prominent tranſverſe veins, running from the midrib to the border, where they are unequally ſawed, ſome of the indentures being much deeper, and the ſegments broader than others. The flowers are produced at the ends of the branches in bunches, their foot-ſtalks being meally, as are alſo the empalements of the flowers, which are cut into five obtuſe ſegments, and are reflexed. The flowers have five ſhort petals, which ſpread open like thoſe of the Pear-tree, having a great number of ſtamina of the ſame length with the petals, terminated by oval ſummits. The germen, which is ſituated below the flowers, afterwards becomes an oval fruit, crowned with the empalement of the flower, having one cell, in which is incloſed three or four ſeeds. It flowers in May, and the fruit ripens in autumn.

This tree may be propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till ſpring, they remain at leaſt one year in the ground before the plants appear; ſo that the fruit ſhould be buried in the ground, as is practiſed with the common Haws, Holly-berries, and thoſe other hard ſeeds which do not come up the ſame year; and when the plants come up, they may be treated in the ſame manner as the Haws, but they

ſhould

ſhould by no means be headed or cut down; when theſe plants are upon a poor chalky ſoil, they make great progreſs, and the wood is very white and hard, ſo has been often uſed for making cogs for mills, and many other purpoſes where hard tough timber is wanted.

It may alſo be propagated by layers in the ſame manner as the Lime-tree and Elm, but theſe ſhould be laid in the young wood; but they are two years before they have ſufficient roots to tranſplant. I have alſo raiſed a few plants from cuttings, which were planted in autumn, in a ſhady border, but there was not more than one eighth part of the cuttings which ſucceeded; therefore I would recommend the raiſing them from ſeeds, for the trees ſo raiſed grow much larger and ſtraiter than thoſe which are raiſed either from layers or cuttings.

The tree will take by grafting, or budding it upon Pear-ſtocks very well, and Pears will take by grafting upon theſe trees, ſo that there is a nearer affinity between the Cratægus and Pear, than there is between either of theſe and the Meſpilus; for although both theſe will ſometimes take upon the Meſpilus, yet neither of them thrive ſo well, or laſt ſo long, when grafted, or budded upon thoſe ſtocks, as they do upon each other; therefore Tournefort, who has joined the Cratægus in his ſection, with the Pear and Quince, has come nearer to the natural diviſion of their genera, than thoſe who have joined the Cratægus to the Meſpilus.

There is another ſpecies of this tree which grows naturally about Verona, from whence I have received dried ſamples of it, but they were without flower and fruit, and came over by the ſame title as the former; for as there is no other growing in that neighbourhood, they have ſuppoſed it to be the common ſort; but if that is the Aria of Theophraſtus, thoſe trees which grow in England are not, for the leaves of the ſort from Verona are ſpear-ſhaped, and above an inch long, and not ſo broad by an inch as thoſe of the Engliſh, and the nerves on the under ſide of the leaves are purpliſh, the leaves terminating in acute points, ſo that I make no doubt of its being a different ſpecies; but as I have not ſeen the growing tree, I would not enumerate it till I had been better informed.

The ſecond ſort grows naturally in many parts of England, and is chiefly found upon ſtrong ſoils; it formerly grew in great plenty in Cane-Wood, near Hampſtead; and lately there was ſome young trees growing in Biſhop's-Wood, near the ſame place; but in many parts of Hertfordſhire there are large trees now growing: this riſes to the height of forty or fifty feet, with a large trunk, ſpreading at the top into many branches, ſo as to form a large head. The young branches are covered with a purpliſh bark, marked with white ſpots, and are garniſhed with leaves placed alternately, ſtanding on pretty long foot-ſtalks; theſe are cut into many acute angles, like thoſe of the Maple-tree; they are near four inches long, and three broad in the middle, having ſeveral ſmaller indentures toward the top, of a bright green on their upper ſide, but a little woolly on their under. The flowers are produced in large bunches toward the end of the branches, they are white, and ſhaped like thoſe of the Pear-tree, but ſmaller, and ſtand upon longer foot-ſtalks; theſe appear in May, and are ſucceeded by roundiſh compreſſed fruit, which are ſhaped like large Haws, and ripen late in autumn, when they are brown; and if kept till they are ſoft, in the ſame way as Medlars, they have an agreeable acid flavour. The fruit of this tree is annually ſold in the London markets in autumn.

The wood of this tree is hard, and very white, and is very uſeful for many purpoſes; but particularly ſo to the millwrights. It may be propagated in the ſame way as the former ſort, but requires a ſtrong ſoil.

The third ſort grows naturally upon mount Baldus, from whence I received it, and on other mountainous parts of Italy; this riſes with a woody trunk about twenty feet high, dividing into many branches, which are covered with a purpliſh ſpotted bark, and cloſely garniſhed with oblong ſawed leaves, ſtanding alternate, on very ſhort foot-ſtalks; they are about three inches long, and one and a half broad, in the broadeſt part, leſſening toward both ends; they are ſlightly ſawed on their edges, and of a deep green on both ſides. The flowers are produced at the end of the branches in ſmall bunches, which have rarely more than four or five flowers in each; they are white, and much ſmaller than thoſe of the former ſorts; theſe are ſucceeded by fruit about the ſize of the common Haw, which is of a dark brown colour when ripe. It flowers in May, and the fruit ripens in autumn.

The fourth ſort is a native of North America, but has been many years cultivated in the Engliſh gardens, where it is known by the title of Cockſpur Haw. Of this there are two ſpecies, one of which has no ſpikes on the branches; but the other has ſtrong thorns which are curved downwards, greatly reſembling the ſpur of a cock, from whence it had this appellation: in other reſpects both ſorts agree in the form of their leaves, their flowers and fruit. However, Dr. Linnæus has been ill informed of the two ſorts by Kalm, who went to America, and is now profeſſor at Abo in Sweden; for the doctor has added the appellation of Cockſpur to the fifth ſort here mentioned, which has long been known in England by the title of Virginia L'Azarole.

The fourth ſort riſes to the height of near twenty feet in England, where the trunk becomes large, and divides into many ſtrong branches, ſo as to form a large head; the leaves are large, oval, and deeply ſawed on their edges, ſo as almoſt to divide them into lobes, which are placed without order; the flowers come out from the ſide of the branches in cluſters; they are large, compoſed for the moſt part of five petals, which ſpread open, and are ſucceeded by pretty large Pear-ſhaped fruit of a ſcarlet colour. It flowers in May, and the fruit ripens in September.

The fifth ſort is generally known by the title of Virginia L'Azarole; this riſes with a ſtrong ſtem to the height of fifteen feet or more, ſending out many irregular branches covered with a light brown bark, and have a few thorns on their ſides; the leaves have ſhort foot-ſtalks, they are narrow at their baſe, but widen upward ſo as to become almoſt of an oval figure, of a lucid green on their upper ſide, and pretty deeply ſawed on their edges; the flowers are white, pretty large, and compoſed of five petals which expand: theſe are ſucceeded by large fruit of a ſcarlet colour; it flowers the end of May, and the fruit ripens in September.

The ſixth ſort grows naturally in North America; this riſes with a ſtrong ſtem to the height of ten or twelve feet, ſending out many ſtrong irregular branches, which, while young, is covered with a bright brown bark, but that on the older branches is of a lighter colour; the leaves are oval, ſpear-ſhaped, ſlightly ſawed on their edges, of a bright green on their upper ſide, but paler on their under; ſometimes they are placed by pairs, at others three or four come out from the ſame joint; the flowers are produced in large cluſters toward the end of the branches, forming a ſort of corymbus, and are ſucceeded by roundiſh fruit of a middling ſize, and a deep red colour. As the branches of this ſort ſhoot very ſtrong, and are generally interwoven with each other, being armed with very long ſtrong thorns, it is very proper for outward fences round gardens or fields.

The ſeventh ſort grows naturally in Italy and the Levant, where the fruit is ſerved up to table with their deſert; this hath a ſtrong ſtem riſing twenty feet high, having many ſtrong irregular branches, covered with a light-coloured bark; the leaves are in ſhape ſomewhat like thoſe of the common Hawthorn, but they are much larger, have broader lobes, and are of a paler colour; the flowers come out in ſmall cluſters from the ſide of the branches, which are in

ſhape like thoſe of the common Hawthorn, but are much larger; as is alſo the fruit, which when fully ripe has an agreeable acid taſte, for which it is eſteemed by the inhabitants of the countries where it grows naturally.

The eighth ſort is the common Hawthorn, which is generally planted for fences in moſt parts of England, therefore being univerſally known to the inhabitants, it requires no deſcription: there are two or three varieties of this ſort, which differ in the ſize of their leaves and the ſtrength of their ſhoots; however, thoſe with the ſmalleſt leaves are generally preferred for hedges, as their branches always grow cloſer together; the method of raiſing the plants, and planting them for hedges, being fully treated of under the article of HEDGES, I need not repeat here.

The ninth ſort grows naturally in North America, this has a ſlender ſhrubby ſtalk, riſing about ſix or ſeven feet high, ſending out many irregular branches, armed with long ſlender thorns, and garniſhed with ſhort, oval, wedge-ſhaped leaves, which are ſawed on their edges, and are woolly on their under ſide; the flowers are ſmall, proceeding from the ſide of the branches, ſtanding ſometimes ſingle, and at other times two or three upon the ſame foot-ſtalk, having large leafy empalements, and are ſucceeded by ſmall roundiſh fruit, with a large leafy umbilicus, which was before the empalement of the flower: the flowers appear the beginning of June, and the fruit ripens very late in the autumn.

This ſort may be propagated in the ſame manner as the firſt, but requires a ſtrong deep ſoil, otherwiſe it will not thrive. It is very hardy in reſpect to cold, but at preſent is very rare in England.

All the ſorts of Haws may be propagated by ſeeds, which ſhould be ſown in autumn, in the ſame manner as hath been directed for the firſt ſort; but as theſe ſeeds are frequently brought from America, and do not arrive here till ſpring, the fruit may be buried in the ground till the autumn following, when they may be taken up and ſown in drills, being careful to cover them ſo as to prevent birds from deſtroying them. In the ſpring following the plants will come up, which ſhould be moderately watered two or three times a week, if the ſpring ſhould prove dry; during the ſummer, they muſt be kept clean from weeds, which if ſuffered to grow, will ſoon overbear the plants and deſtroy them. The following ſpring the plants ſhould be planted out before they begin to ſhoot, into a nurſery-bed, where they may grow two years to get ſtrength, when they may be tranſplanted where they are to remain. If theſe plants are planted in a moiſt light ſoil, their roots will extend to a conſiderable diſtance, and put up many ſhoots, which may be taken off in the ſpring, and thereby may be increaſed; this will alſo take if grafted on the Pear, and if the young branches are laid down, they will take root, ſo the plants may be propagated either way.

The other ſorts of Hawthorn are generally planted among flowering ſhrubs of the ſame growth, where they add to the variety.

CRATEVA. Lin. Gen. Plant. 528. Tapia. Plum. Nov. Gen. 22. tab. 21. Garlic Pear.

The CHARACTERS are,

The empalement of the flower is of one leaf, cut at the top into four oval ſegments, which ſpread open. The flower hath four oval petals, which are narrow at their baſe, and broad at the top. It hath many briſtly ſtamina, which are longer than the petals, terminated by oblong erect ſummits. It hath a long incurved ſtyle, upon which ſits the oval germen, crowned by the ſtigma, ſitting cloſe on the top. The germen afterward becomes a large fleſhy globular fruit with one cell, including many kidney-ſhaped ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's eleventh claſs, intitled Dodecandria Monogynia, the plants of this claſs and ſection have twelve ſtamina in their flowers, and one ſtyle.

The SPECIES are,

1. CRATEVA (*Tapia*) inermis foliis integerrimis, foliolis lateralibus baſiantica brevioribus. Lin. Sp. 673. *Smooth Crateva, or Garlic Pear.* Tapia arborea triphylla: Plum. Nov. Gen. 22.
2. CRATEVA (*Marmalos*) ſpinoſa foliis ſerratis. Flor. Zeyl. 212. *Prickly Crateva.* Cucurbitifera trifolia ſpinoſa medica, fructu pulpa Cydonii æmula. Pluk. Alm. 125.

The firſt ſort grows naturally in both Indies. I received the fruit of this from Jamaica, where it grows in great plenty, which were ſent me by William Williams, Eſq; of St. Anne's, in that iſland, who has been ſo kind as to furniſh me with many other curious ſeeds which have ſucceeded in the Chelſea garden.

This tree hath a very large trunk, which riſes to the height of thirty feet or upward, covered with a dark green bark, ſending out many branches, ſo as to form a large head. The branches are garniſhed with trifoliate leaves, ſtanding on pretty long foot-ſtalks; the middle leaf, which is much larger than either of the other, is oval, about five inches long, and two and a half broad in the middle. The two ſide leaves are oblique, thoſe ſides which join the middle leaf being much narrower than the other, and turn at both ends toward the middle, ſo that their midrib is not parallel to the ſides; theſe two end in acute points. The leaves are ſmooth, of a light green on the upper ſide, but pale on their under; their edges are entire. The flowers are produced at the ends of the branches, ſtanding upon long foot-ſtalks; theſe have empalements of one leaf, which are cut into four ſegments, almoſt to the bottom. The flower hath four oblong petals, which ſpread open, and are reflexed, having many long ſlender ſtamina, which are connected at their baſe, but ſpread open above, and are terminated by oblong purple ſummits; theſe ſurround a ſlender long ſtyle, upon which is ſituated the oval germen, which is crowned by an obtuſe ſtigma. The germen afterward becomes a round fruit, about the ſize of an Orange, having a hard brown ſhell, or cover, incloſing a mealy pulp, filled with kidney-ſhaped ſeeds. This fruit hath a ſtrong ſmell of Garlic, which is communicated to the animals that feed on it. This is propagated by ſeeds, which muſt be procured from the countries where the trees grow naturally, and muſt be ſown on a hot-bed in the ſpring; when the plants come up, they muſt be treated in the ſame manner as hath been directed for the ANNONA, to which article the reader is deſired to turn for the culture.

The ſecond ſort grows naturally in India, where it grows to a great height, with a large trunk, ſending out many long branches, garniſhed with trifoliate leaves, which are oblong, entire, and end in acute points; between theſe the branches are armed with long ſharp thorns, which come out by pairs, and ſpread aſunder. The flowers are produced in ſmall cluſters from the ſide of the branches, five or ſeven ſtanding upon a common branching foot-ſtalk; theſe have each five acute petals, which are reflexed, and many ſtamina which ſtand round a ſingle ſtyle of the ſame length; the petals are green on the outſide, whitiſh within, and have a grateful odour. After the flower is paſt, the germen ſwells to a large fruit the ſize of an Orange, having a hard ſhell, which incloſes a fleſhy viſcous pulp, of a yellowiſh colour, having many oblong plain ſeeds ſituated within it; the pulp of this fruit hath an agreeable flavour when ripe, ſo is frequently eaten in India, where they ſerve up the fruit, mixed with Sugar and Orange, in their deſerts, and is eſteemed a great delicacy.

This ſort is propagated by ſeeds, which muſt be procured from the places where it grows naturally; theſe muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſmall pot filled with light kitchen-garden earth, and plunged into a hot-bed of tanners bark, ſhading them every day from the ſun, until they have taken freſh root, after which they may be treated in the ſame manner as the Annona; but

but ſhould be ſparingly watered in the winter ſeaſon.

CREPIS. Lin. Gen. Plant. 819. Hieraicioides. Vaill. Act. R. Sc. 1721. Hieraicium. Tourn. Baſtard Hawkweed.

The CHARACTERS are,

It hath a flower compoſed of many hermaphrodite florets, which are included in a double empalement; the outer is ſhort, ſpreading, and falls off; the inner one is permanent, oval, and furrowed, having many narrow ſcales, which are contracted together at the top. The hermaphrodite florets are of one leaf; they are uniform, tongue-ſhaped, and are indented at the top in five parts; theſe ſpread over each other like the ſcales of fiſh; they have each five ſhort hairy ſtamina, terminated by cylindrical ſummits. The germen is ſituated in the center of the florets, ſupporting a ſlender ſtyle, crowned by two reflexed ſtigmas. The germen afterward becomes an oblong ſeed, crowned with a long feathery down, which ſits upon little foot-ſtalks.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia Æqualis. The flowers of this ſection are compoſed of hermaphrodite florets, which are fruitful.

The SPECIES are,

1. CREPIS (*Rubra*) foliis amplexicaulibus, lyrato-runcinatis. Vir. Cliff. 79. *Crepis with lyre-ſhaped leaves embracing the ſtalks.* Hieracium dentis leonis folio, flore ſuave rubente. C. B. P. 127. *Hawkweed with a Dandelion leaf.*
2. CREPIS (*Barbata*) foliis pinnatis angulatis, petiolatis, dentatis. Prod. Leyd. 126. *Crepis with angular, indented, winged leaves, having foot-ſtalks.* Hieracium foliis Cichorei ſylveſtris villoſis, odore Caſtorei. Bot. Monſp.
3. CREPIS (*Bætica*) involucris calyce longioribus incurvatis, foliis lanceolatis dentatis. *Crepis with an incurved volucrum longer than the empalement, and ſpear-ſhaped indented leaves.* Hieracium medio-nigrum, Bœticum majus. Par. Bat. 185. *Greater Spaniſh Hawkweed with flowers black in the middle.*
4. CREPIS (*Alpina*) foliis amplexicaulibus, oblongis, acuminatis inferioribus, ſuperne, ſummis inferne, denticulatis. Hort. Upſal. 238. *Crepis with oblong pointed leaves embracing the ſtalk, the lower being indented upward; and the upper downward.* Hieracium Alpinum Scorzoneræ folio. Tourn. Inſt. 472.

There are ſeveral other ſpecies of this genus, ſome of which grow naturally in England, and others are weeds in divers parts of Europe, ſo are rarely admitted into gardens, therefore I ſhall not enumerate them here.

The firſt ſort grows naturally in Apulia, but is now commonly cultivated in Engliſh gardens for ornament; it is an annual plant, which periſhes after it hath ripened ſeeds. This hath many ſpear-ſhaped leaves which ſpread on the ground, deeply jagged on their ſides; between them ariſe the branching ſtalks, which grow a foot and a half high, dividing into many ſlender branches, garniſhed with oblong leaves deeply indented on their edges, embracing the ſtalks with their baſe; the ſtalks are each terminated by one large radiated flower, of a ſoft red colour, compoſed of many half florets, which are ſucceeded by oblong ſeeds crowned with a feathery down. It flowers in June and July, and the ſeeds ripen in autumn. This plant, when bruiſed, emits an odour like bitter Almonds.

The ſeeds of this plant ſhould be ſown in the ſpring, on the borders of the flower-garden where they are deſigned to remain, ſo that if ſix or eight ſeeds are ſown in each patch, when the plants come up, they may be reduced to three or four; and if theſe are kept clean from weeds, they will require no other culture, excepting the putting ſmall ſticks down, to faſten the ſtalks, to prevent their being broken by winds or rain. If the ſeeds are ſown in autumn, or permitted to ſcatter, the plants will come up and live through the winter without ſhelter, and theſe will flower early in the ſpring.

The ſecond ſort grows naturally in the ſouth of France, and in Italy. This is a biennial plant, and ſometimes, when it is in poor ground, it will continue longer; it hath a thick tap-root, which ſtrikes deep into the ground, ſending out many ſmall fibres; the lower leaves are from four to five inches long, and about a quarter of an inch broad, having ſeveral deep jags on their edges, the ſegments ending in acute points; from the ſame root ariſes four or five ſtalks, which grow about nine or ten inches high, the lower part of theſe are garniſhed with leaves of the ſame form with thoſe near the root, but are ſmaller, and more jagged; the upper part of the ſtalks are naked, and branch out into two, and ſometimes three branches, each being terminated by one flower of a gold colour, inclining to copper, compoſed of many florets which are included in a ſingle empalement; the flowers are ſucceeded by oblong narrow ſeeds, crowned with a feathery down: the whole plant, when bruiſed, emits a ſtrong odour of Caſtor. It flowers in June, and the ſeeds ripen in autumn. This is frequently preſerved in gardens for the ſake of variety.

It is propagated by ſeeds in the ſame manner as the firſt ſort, but as this continues longer, the ſeeds need not be annually ſown. The plants will require no other culture but to keep them clean from weeds, and if the ſeeds are permitted to ſcatter, the plants will come up without any trouble, ſo need only be thinned where they are too cloſe.

The third ſort is an annual plant, which grows naturally in Spain, but is now frequently propagated in the flower-gardens for ornament. This puts out leaves near the root, which are nine inches long, and almoſt two broad in the middle, of a light green colour, and a little jagged on their edges; the ſtalks riſe a foot and a half high, dividing into many branches, garniſhed with leaves of the ſame form as thoſe at bottom, but ſmaller, and ſit cloſe to the branches; the flowers are produced at the end of the branches; theſe have a double empalement, compoſed of many long very narrow leaves; the outer ſeries are reflected downward, and turn upward again, and are inflexed at their extremities. The flowers are compoſed of many florets, which are ſtretched out on one ſide at the top like a tongue, theſe are cut at their extremities into four or five parts; they ſpread regularly in form of rays, and are ſituated over each other like ſcales of fiſh; there are two varieties of this, one with a deep yellow, and the other of a ſulphur colour inclining to white; but both have a dark black bottom or middle, ſo make a pretty appearance in a garden. It flowers in June and July, and the ſeeds ripen in autumn. This plant requires the ſame culture as the firſt, and is equally hardy, ſo that where the ſeeds are permitted to ſcatter, the plants will come up without care.

The fourth ſort grows naturally on the Alps; this is alſo an annual plant, which ſends out many oblong pointed leaves near the root; they are five inches long, and almoſt two broad at their baſe, leſſening gradually to a point; the upper part of theſe are ſlightly indented, but their lower parts are entire; the ſtalks are ſtrong and upright, riſing two feet high, dividing into three or four branches, which grow erect, and are terminated by pale white flowers, incloſed in a ſtrong hairy empalement, which contracts cloſe toward the top; the ſtalks are garniſhed with leaves of the ſame form as the lower, which embrace them with their baſe, where they are ſlightly indented, but their upper parts are entire; theſe leaves are hairy and rough. It flowers in June, and the ſeeds ripen in autumn. This requires the ſame culture as the firſt, and the ſeeds will ſcatter about the garden, ſo that if the plants are not deſtroyed, they will maintain themſelves without any care.

CRESCENTIA. Lin. Gen. Plant. 680. Cujete. Plum. Nov. Gen. 23. tab. 16. Calabaſh-tree.

The CHARACTERS are,

The flower hath one petal, which is irregular, having a

curved gibbous tube, whoſe brim is cut into five unequal ſegments, which are reflexed; this hath an empalement, which is ſhort, of one leaf, cut into two obtuſe ſegments, which are concave. It hath four ſtamina, two of which are of the length of the petal; the other are ſhorter, terminated by twin ſummits which are proſtrate. It hath an oval germen ſitting on a foot-ſtalk, ſupporting a long ſlender ſtyle, crowned by a roundiſh ſtigma. The germen afterward becomes an oval or bottle-ſhaped fruit, with a hard ſhell, incloſing many flat heart-ſhaped ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia. The flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. CRESCENTIA (*Cujete*) foliis lanceolatis, utrinque attenuatis. Hort. Cliff. 327. *Creſcentia with ſpear-ſhaped leaves, narrowed at both ends.* Cujete foliis oblongis anguſtis magno fructu ovato. Plum. Nov. Gen. 23. *Calabaſh-tree with oblong narrow leaves, and a large oval fruit.*
2. CRESCENTIA (*Latifolia*) foliis oblongo-ovatis, fructu rotundo, cortice fragili. *Creſcentia with oblong oval leaves, and round fruit with a tender ſhell.* Cujete latifolia, fructu putamine fragili. Plum. Nov. Gen. 23. *Broad-leaved Calabaſh-tree whoſe fruit hath a tender ſhell.*

There are ſome varieties of theſe trees, which only differ in the ſize and ſhape of their fruit; but thoſe are variations which ariſe from ſeeds of the ſame tree, ſo are not to be enumerated as diſtinct ſpecies; but the two here mentioned are undoubtedly different ſpecies, for I have frequently raiſed them from ſeeds, and have never found either of them vary.

The firſt ſort grows naturally in Jamaica, and in all the Leeward Iſlands. This hath a thick trunk, covered with a whitiſh bark, which riſes from twenty to thiry feet high, having ſeveral knots all the length, and at the top divides into many branches, which ſpread every way, and form a large regular head, garniſhed with leaves which come out irregularly; ſometimes ſingle, at others many ariſe from the ſame knot; they are near ſix inches long, and one and a half broad in the middle, diminiſhing gradually to both ends; they are of a lucid green, and have very ſhort foot-ſtalks, with one midrib, and ſeveral tranſverſe veins running from that to the ſides. The flowers are produced from the ſide of the large branches, and ſometimes from the trunk, ſtanding upon long foot-ſtalks; their empalement is deeply divided into two obtuſe ſegments. The flower hath but one petal, which is irregular, having an incurved tube, which is divided at the brim into two irregular ſegments, which turn backward; theſe are of a greeniſh yellow colour, ſtriped and ſpotted with brown; the flowers are an inch and a half long, from the bottom of the tube to the extent of the upper ſegment. They have four ſlender ſtamina, of the ſame colour with the petal, which are of unequal lengths, two being full as long as the petal, and the other are much ſhorter, terminated by oblong ſummits, divided in the middle, which lie proſtrate on the ſtamina. From the lower part of the tube ariſes a long ſlender foot-ſtalk, ſupporting the oval germen, which hath a headed ſtigma ſitting cloſe on the top; the germen afterward turns to a large fruit, of different forms and ſize; they are often ſpherical, ſometimes they are oval, and at other times they have a contracted neck like a bottle; and are ſo large, as when the pulp and ſeeds are cleaned out, the ſhells will contain three pints or two quarts of liquid. Theſe fruit or ſhells, are covered with a thin ſkin of a greeniſh yellow when ripe, which is peeled off; and under this is a hard ligneous ſhell, incloſing a pale, yellowiſh, ſoft pulp, of a tart unſavory flavour, ſurrounding a great number of flat heart-ſhaped ſeeds.

The ſhells of this fruit are cleaned of their pulp, and the outer ſkin taken off, by the inhabitants of the iſlands, and dried; then they uſe them for drinking-cups, ſome of which are tipped with ſilver, and to the necks they faſten handles, and ſome of the long ſmall fruit are formed into the ſhape of ſpoons or ladles, and are uſed as ſuch; the round ones are cut through the middle, and are uſed as cups for Chocolate. The Indians put a number of ſmall ſtones into theſe ſhells, when cleared of the pulp, to make a ſort of rattle: in ſhort, they convert theſe ſhells into many ſorts of furniture, which is the principal uſe made of the fruit; for the pulp is ſeldom eaten, except by the cattle in the time of great droughts. The leaves and branches of this tree are alſo eaten by the cattle in times of ſcarcity. The wood of this tree is hard and ſmooth, ſo is frequently uſed for making ſaddles, ſtools, and other furniture.

The ſecond ſort ſeldom riſes more than fifteen or twenty feet high; this hath an upright trunk, covered with a white ſmooth bark, ſending out many lateral branches at the top, garniſhed with leaves three inches in length, and one and a quarter broad; theſe are ranged alternately on the branches, ſitting upon ſhort foot-ſtalks; they are of a deeper green than thoſe of the firſt ſort, and their edges are entire. The flowers come out from the ſide of the large branches and the trunk; theſe are ſmaller, and of a deeper yellow colour than thoſe of the firſt; the fruit of this is ſometimes round, at others oval, ſome being much larger than the other; the ſhells of this fruit are thin and very brittle, ſo are unfit for any purpoſes to which thoſe of the former are employed; the ſeeds are alſo much thinner, and the pulp is of a deeper yellow. The wood of this tree is hard, and very white, ſo might be uſeful, were it not for the plenty of other ſorts, which abound in many of the iſlands. This was found growing naturally in plenty at Campeachy by the late Dr. Houſtoun, who ſent the fruit to England.

Theſe trees are too tender to live abroad in England, ſo require a warm ſtove to be preſerved here. They are eaſily propagated by ſeeds, which muſt be procured from the countries where they grow naturally; the way is to have the entire fruit ſent over when fully ripe; for when the ſeeds are taken out of the pulp abroad, and ſent over hither, if they are long in their paſſage they will loſe their growing quality before they arrive, as I have often experienced. Theſe muſt be ſown on a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted into a ſmall halfpenny pot filled with light ſandy earth, and plunged into a hot-bed of tanners bark, obſerving to ſhade them from the ſun till they have taken freſh root; when they muſt be treated in the ſame manner as other tender plants, which are natives of the ſame countries. In winter they muſt be placed in the tan-bed of the bark-ſtove, and during that ſeaſon ſhould have but little water; in ſummer they will require to be gently watered two or three times a week, according to the warmth of the ſeaſon; and in hot weather they ſhould have a large ſhare of air admitted to them. With this management the plants will make great progreſs, and their leaves being of a fine green, they make a pretty variety in the ſtove, but have not as yet flowered in England.

CRESS the Garden. See LEPIDIUM.

CRESS the Indian. See TROPÆOLUM.

CRESS the Water. } See SISYMBRIUM.
CRESS the Winter. }

CRINUM. Lin. Gen. Plant. 366. Lilio-Aſphodelus. Com. Rar. 14. Dillen. Hort. Elth. 194. Aſphodel Lily.

The CHARACTERS are,

The involucrum is compoſed of two oblong leaves, in form of a ſheath or cover, which dries and is reflexed. The flower hath one petal, which is funnel-ſhaped, having a long tube, deeply cut at the top into ſix ſegments which are reflexed. It hath ſix long ſtamina, which are inſerted in the tube of the petal, and are ſtretched out beyond the flower, ſpreading open; theſe are terminated by oblong proſtrate ſummits, riſing at one end; the germen is ſituated

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in the bottom of the flower, ſupporting a long ſlender ſtyle, crowned by a ſmall trifid ſtigma. The germen afterward becomes an oval capſule with three cells, each containing one or two oval ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

The SPECIES are,

1. CRINUM (*Africanum*) foliis ſublanceolatis planis, corollis obtuſis. Lin. Sp. Plant. 292. *Crinum with plain ſpear-ſhaped leaves, and obtuſe petals.* Hyacinthus Africanus tuberoſus, flore cæruleo umbellato. Hort. Amſt. 1. p. 133. *African tuberous Hyacinth, with a blue umbellated flower.*
2. CRINUM (*Aſiaticum*) foliis carinatis. Flor. Zeyl. 127. *Crinum with keel-ſhaped leaves.* Lilium Zeylanicum, bulbiferum & umbelliferum. H. L. 682.
3. CRINUM (*Americanum*) corollarum apicibus introrſum unguiculatis. Lin. Sp. Plant. 292. *Crinum with the tops of the petals formed on the inſide like the nails of a finger.* Lilio-aſphodelus Americanus ſempervirens, maximus Polyanthus albus. Com. Rar. Pl. 15. tab. 15.
4. CRINUM (*Latifolium*) foliis ovato-lanceolatis acuminatis ſeſſilibus planis. Lin. Sp. 419. *Crinum with oval, ſpear-ſhaped, plain leaves, ending in acute points.* Jovanna-pola-tali. Hort Mal. vol. 11. p. 77.

The firſt ſort grows naturally at the Cape of Good Hope, from whence it was brought to the gardens in Holland, and hath ſince been ſpread into moſt of the curious gardens in Europe. The root of this plant is compoſed of many thick fleſhy fibres, diverging from the ſame head, which ſtrike deep into the ground, and put out many ſmaller fibres, which are white and fleſhy; from the ſame head ariſes a cluſter of leaves ſurrounding each other with their baſe, ſo as to form a kind of herbaceous ſtalk, about three inches high, from which the leaves ſpread only two ways, appearing flat the other two. The flower-ſtalk ariſes by the ſide of theſe leaves, which is round, hollow, and near three feet high, terminated by a large head of flowers, included in a kind of ſheath, which ſplits into two parts, and is reflexed. The flowers ſtand each upon a foot-ſtalk about one inch long; they are tubulous, have but one petal, which is cut almoſt to the bottom, into ſix oblong blunt ſegments, which are waved on their edges; in the center is ſituated an oval three-cornered germen, ſupporting a long ſtyle, which is attended by ſix ſtamina, two of the ſame length, two ſomewhat ſhorter, and the two which reſt upon the lower ſegments are the ſhorteſt. The flowers are of a bright blue colour, and grow in large umbels, ſo make a fine appearance. They begin to flower in September, and frequently continue in beauty till ſpring, which renders them more valuable.

This plant is propagated by offſets, which come out from the ſide of the old plants, and may be taken off the latter end of June, at which time theſe plants are in their greateſt ſtate of reſt; when the plants ſhould be turned out of the pots, and the earth carefully cleared away from the roots, that the fibres of the offſets may be better diſtinguiſhed, which ſhould be ſeparated from thoſe of the old roots, being careful not to break their heads. But where they adhere ſo cloſely to the old plant, as not to be ſo ſeparated, they muſt be cut off with a knife, taking great care not to wound or break the roots of either the offſets or the parent plant. When theſe are parted, they ſhould be planted each into a ſeparate pot, filled with light kitchen-garden earth, and placed in a ſhady ſituation, where they may enjoy the morning ſun, giving them a little water twice a week, if the weather proves dry; but they muſt not have too much wet, eſpecially at this ſeaſon, when they are almoſt inactive; for as the roots are fleſhy and ſucculent, they are apt to rot with great moiſture. In about five weeks time the offſets will have put out new roots, when the pots may be removed to a more ſunny ſituation, and then they may have a little more water, which will ſtrengthen their flowering, but it muſt not be given them too liberally for the reaſons before given. In September they will put out their flower-ſtalks, and toward the end of that month the flowers will begin to open, when, if the weather ſhould not be good, they ſhould be removed under ſhelter, to prevent the flowers from being injured by froſt or too much wet; but they ſhould have as much free air as poſſible, otherwiſe the flowers will be pale-coloured and weak. Toward the end of October they ſhould be removed into the green-houſe, and placed where they may enjoy as much free air as poſſible, and not be over-hung by other plants; and during the winter, they may have a little water once a week or oftener in mild weather, but in froſt they ſhould be kept dry. This plant only requires protection from froſt and moiſture, ſo ſhould not have any artificial warmth in winter, and muſt be placed in the open air in ſummer.

The ſecond ſort hath large bulbous roots, which ſend out many large fleſhy fibres, having bulbs formed at their ends; the leaves are near three feet long, hollow on their upper ſide, and cloſely fold over each other at their baſe, ſpreading out on every ſide; the outer leaves generally turn downward at the top; they are of a deep green, obtuſe at their points, with a ridge on their under ſide. The flower-ſtalk ariſes on one ſide the leaves, which is thick, ſucculent, hollow in the middle, and a little compreſſed on two ſides; this grows two feet high or more, and is of the ſame colour with the leaves, and are terminated by large umbels of flowers, with a ſheath or cover, which ſplits lengthways, and reflexed back to the ſtalk, where it dries and remains; the tubes of the flowers are narrow, near four inches long, and the upper part is deeply cut into ſix long ſegments, which are reflexed back almoſt to the tube; in the center ariſes the ſtyle, attended by ſix long ſtamina, which ſtand out beyond the petal, and is terminated by oblong proſtrate ſummits of a yellow colour. After the flowers are paſt, the germen, which is ſituated at the bottom of the tube, becomes a large, roundiſh, three-cornered capſule, having three cells, two of which are generally abortive, and the third hath one or two irregular bulbs, which if planted produce young plants.

The third ſort hath broader leaves than the ſecond, which are plain, and not hollowed on their upper ſide, but they are ſhorter and of a lighter green; theſe embrace each other at their baſe; by the ſide of theſe ariſe the flower-ſtalk, which is compreſſed and hollow, riſing about two feet high, and terminated by large umbels of white flowers, like thoſe of the former ſort, but the ſegments of the petal are broader and not ſo much reflexed.

The fourth ſort hath roots like thoſe of the ſecond ſort; the leaves of this are narrower at their baſe, and are ſtained with purple on their under ſide; the flower-ſtalks are purple, and grow to the ſame height as thoſe of the ſecond; the flowers are in ſhape like them, but the tube is purple, and the ſegments have a purple ſtripe running through them; the ſtamina alſo are purple, which renders this more beautiful than either of the other ſorts; and theſe differences are conſtant in all the plants which riſe from ſeeds, ſo there can be no doubt of its being a diſtinct ſort.

Theſe three ſorts grow naturally in both Indies, ſo are very tender, therefore muſt be kept in a warm ſtove, otherwiſe they will not thrive in England; they are eaſily propagated by offſets, which the roots put out in plenty; or by the bulbs which ſucceed the flowers, and ripen perfectly here. Theſe muſt be planted in pots filled with rich earth, and if plunged into the tan-bed in the ſtove, the plants will make greater progreſs and flower oftener, than when they are placed on ſhelves; though in the latter way they will ſucceed very well, provided they are kept in a good temperature of heat. The roots ſhould be tranſplanted in the ſpring, and all the offſets taken off, otherwiſe they will fill the pots and ſtarve the old plants: they muſt be frequently refreſhed with

water, but it muſt not be given them too plentifully, eſpecially in winter. Theſe ſorts flower at every ſeaſon of the year, which renders them more valuable; for where there are many plants, there will be almoſt a perpetual ſucceſſion of flowers, which emit a very agreeable odour.

CRITHMUM. Lin. Gen. Plant. 303. Tourn. Inſt. R. H. 317. tab. 169. Samphire.

The CHARACTERS are,

It is a plant with an umbelliferous flower; the great umbel is hemiſpherical, and compoſed of many ſmaller of the ſame figure; the involucrum of the general umbel is compoſed of ſeveral ſpear-ſhaped leaves; thoſe of the particular umbels have very narrow leaves the length of the umbel; the general umbel is uniform; the flowers have five oval inflexed petals, which are almoſt equal; they have five ſtamina the length of the petals, which are terminated by roundiſh ſummits. The germen is ſituated under the flower, ſupporting two reflexed ſtyles, crowned by obtuſe ſtigmas. The germen afterward becomes an oval compreſſed fruit, dividing into two parts, each having one compreſſed, elliptical, furrowed ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flowers having five ſtamina and two ſtyles.

The SPECIES are,

1. CRITHMUM (*Maritimum*) foliolis lanceolatis carnoſis. Hort. Cliff. 98. *Samphire with ſpear-ſhaped fleſhy leaves.* Crithmum ſive Fœniculum maritimum minus. C. B. P. 288. *Samphire.*
2. CRITHMUM (*Pyrenaicum*) foliolis lateralibus bis trifidis. Hort. Cliff. 98. *Samphire whoſe ſmaller leaves on their ſides are doubly trifid.* Apium Pyrenaicum thapſicæ facie. Tourn. Inſt. 305.

The firſt ſort grows upon the rocks by the ſea-ſide, in many parts of England. This hath a root compoſed of many ſtrong fibres, which penetrate deep into the crevices of the rocks, ſending up ſeveral fleſhy ſucculent ſtalks, which riſe about two feet high, garniſhed with winged leaves, which are compoſed of three or five diviſions, each of which hath three or five ſmall, thick, ſucculent leaves near half an inch long; the foot-ſtalks of the leaves embrace the ſtalks at their baſe. The flowers are produced in circular umbels at the top of the ſtalks; theſe are of a yellow colour, compoſed of five petals, which are near equal in ſize, and are afterward ſucceeded by ſeeds ſomewhat like thoſe of Fennel, but are larger. This herb is pickled, and eſteemed very comfortable to the ſtomach, and is very agreeable to the palate; it provokes urine gently, removes the obſtructions of the viſcera, and creates an appetite; it is commonly uſed for ſauce; it is gathered on the rocks where it grows naturally, but the people who ſupply the markets with it, ſeldom bring the right herb, but inſtead of it they bring a ſpecies of Aſter, which is called golden Samphire, but hath a very different flavour from the true, nor has it any of its virtues. This grows in greater plenty, and upon the plain ground which is overflowed by the ſalt water; whereas, the true Samphire grows only out of the crevices of perpendicular rocks, where it is very difficult to come at. It flowers in July, and the ſeeds ripen in autumn.

This plant is with difficulty propagated in gardens, nor will it grow ſo vigorous with any culture, as it does upon rocks; but if the plants are planted on a moiſt gravelly ſoil, they will thrive tolerably well, and may be preſerved ſome years. It may be propagated either by ſeeds or parting the roots.

The ſecond ſort is by Tournefort ranged in his genus of Apium. This grows naturally on the Pyrenean mountains. It is a biennial plant, which doth not flower till the ſecond year, and periſhes ſoon after the ſeeds are ripe. There are two or three ſorts of this plant, which differ in their outer appearance, but I am not certain of their being diſtinct ſpecies. One of theſe is titled by Mr. Ray, Apium montanum five petræum album. This is of humbler growth than the other; the ſmall leaves are broader, and not ſo much cut on their edges, and are of a paler green: theſe plants are preſerved in a few gardens for the ſake of variety; they are propagated by ſeeds, which ſhould be ſown in the autumn where they are deſigned to remain, and will require no other culture but to keep them clean from weeds, and thin them where they are too cloſe.

CRISTA GALLI. See PEDICULARIS.

CRISTA PAVONIS. See POINCIANA.

CROCUS. Lin. Gen. Plant. 53. Tourn. Inſt. R. H. 350. tab. 183, 184. [is ſo called of the youth Crocus, who (as the poets feign) loved Smilax with ſo violent a paſſion, that, by reaſon of impatience, he was turned into a flower of his name.] Saffron.

The CHARACTERS are,

It hath a ſpatha or ſheath of one leaf. The flower hath one petal, which is deeply cut into ſix oblong ſegments, which are equal. It hath three ſtamina which are ſhorter than the petal, terminated by arrow-pointed ſummits. The roundiſh germen is ſituated at the bottom of the tube, ſupporting a ſlender ſtyle, crowned by three twiſted ſtigmas, which are ſawed. The germen afterward becomes a roundiſh fruit, with three cells, filled with roundiſh ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's third claſs, intitled Triandria Monogynia, the flower having three ſtamina and one ſtyle.

The SPECIES are,

1. CROCUS (*Sativus*) ſpathâ univalvi radicali, corollæ tubo longiſſimo. Lin. Sp. Plant. 36. *Saffron with a ſpatha near the root, having one valve, and a long tube to the flower.* Crocus ſativus. C. B. P. 65. *Cultivated Saffron.*
2. CROCUS (*Autumnalis*) ſpathâ univalvi pedunculato, corollæ tubo breviſſimo. *Saffron with a ſpatha on the foot-ſtalk, having one valve, and a very ſhort tube to the flower.* Crocus juncifolius autumnalis, flore magno purpuraſcente. Boerh. Ind. alt. 2. 120.
3. CROCUS (*Vernus*) ſpathâ bivalvi radicali, floribus ſeſſilibus. *Crocus with a bivalve ſpatha near the root, and flowers ſitting cloſe to the ground.* Crocus vernus latifolius, flavo flore varius. C. B. P. 66. *Commonly called Biſhop's Crocus.*
4. CROCUS (*Biflora*) ſpathâ biflorâ corollæ tubo tenuiſſimo. *Crocus with two flowers in each ſpatha, having very narrow tubes.* Crocus vernus, ſtriatus, vulgaris. Par. Bat. *Ordinary, ſpring, ſtriped Crocus.*

There are a much greater variety of theſe flowers than are here enumerated; but as moſt, if not all of them are only ſeminal variations, I thought it would be needleſs to particularize them here, eſpecially as there are frequently new varieties obtained from ſeeds. Thoſe which are here enumerated, I think muſt be allowed to be ſpecifically different, ſince they have many diſtinguiſhing characters, which are ſufficient to determine the ſpecific difference in plants.

The firſt ſort is the plant which produces the Saffron, which is a well known drug: this hath a roundiſh bulbous root as large as a ſmall Nutmeg, which is a little compreſſed at the bottom, and is covered with a coarſe, brown, netted ſkin; from the bottom of this bulb is ſent out many long fibres, which ſtrike pretty deep into the ground; from the upper part of the root come out the flowers, which, together with the young leaves, whoſe tops juſt appear, are cloſely wrapped about by a thin ſpatha or ſheath, which parts within the ground, and opens on one ſide. The tube of the flower is very long, ariſing immediately from the bulb, without any foot-ſtalk, and at the top is divided into ſix oval obtuſe ſegments, which are equal, of a purple blue colour. In the bottom of the tube is ſituated a roundiſh germen, ſupporting a ſlender ſtyle, which is not more than half the length of the petal, crowned with three oblong golden ſtigmas (which is the Saffron;) theſe ſpread aſunder each way. The ſtyle is attended by three ſtamina, whoſe baſes are inſerted in the tube of the petal, and riſe to the height of the ſtyle, where they are terminated by arrow-pointed ſummits. This plant flowers in October, and the leaves keep growing all the winter, but it never produces any ſeeds here.

The

The ſecond ſort grows naturally on the Alps and Helvetian mountains: this hath a ſmaller bulbous root than the firſt, which is more compreſſed; the flowers appear about the ſame ſeaſon with the former, but they riſe with a ſhort foot-ſtalk, having a ſhort ſpatha or ſheath juſt below the flower, which covers it before it expands. The tube of the flower is very ſhort, the petal being divided almoſt to the bottom, and the ſegments terminate in acute points; the ſtamina and ſtyle are ſhort, and the leaves of the plant are very narrow. The flower is of a deep blue; but there is a variety of this with a ſky blue flower, which is ſuppoſed to have been produced by ſeeds. Dr. Linnæus has ſuppoſed theſe, and alſo all the varieties of the Spring Crocus, to be but one ſpecies, but there can be no doubt of theſe being diſtinct from thoſe of the Spring.

The third ſort hath a pretty large, compreſſed, bulbous root, covered with a light, brown, netted ſkin, from which ariſe four or five leaves, like thoſe of the the other Vernal Crocuſes, of a purpliſh colour on their lower parts; from between theſe come out one or two flowers of a deep yellow colour, ſitting cloſe between the young leaves, never riſing above two inches high; theſe have an agreeable odour; the outer ſegments of the petal are marked with three black ſtreaks or ſtripes running lengthways from the bottom to the top of the ſegment; theſe are narrower than the inner ſegments. From the double arrangement of theſe ſegments ſome have called it a double flower. Theſe ſegments have dark purple bottoms, and the tube of the flower hath as many purple ſtripes as there are ſegments in the petal. Out of the center of the tube ariſes a ſlender ſtyle, crowned by a golden ſtigma, which is broad and flat, and is attended by three ſlender ſtamina of the ſame length, terminated by yellow ſummits. After the flower is paſt, the germen puſhes out of the ground, and ſwells to a roundiſh three-cornered ſeed-veſſel, which opens in three parts, and is filled with roundiſh brown ſeeds. This is one of the earlieſt Crocuſes in the ſpring.

The fourth ſort riſes with a few very narrow leaves, which are, together with the flower-buds, cloſely wrapped round by a ſpatha or ſheath, out of which ariſe two flowers, one of which hath a longer tube than the other, but theſe are very ſlender, and do not riſe much above the ſpatha; there the petal enlarges, and is divided into ſix obtuſe ſegments, which are of equal ſize; they are of a dirty white on their outſide, with three or four purple ſtripes in each; the inſide of the petal is of a purer white; the ſtamina and ſtyle are nearly the ſame as thoſe of the former ſort. This is one of the earlieſt ſorts which flowers in the ſpring.

The VARIETIES of the autumnal Crocus are,

1. The ſweet-ſmelling autumnal Crocus, whoſe flowers come before the leaves. C. B. This is our ſecond ſort.
2. The autumnal mountain Crocus. C. B. This hath a paler blue flower.
3. The many flowering bluiſh autumnal Crocus. C. B. This hath many ſky blue flowers.
4. The ſmall flowering autumnal Crocus. C. B. This hath a ſmall deep blue flower.

The VARIETIES of the Spring Crocus are,

1. Broad-leaved, purple, variegated, Spring Crocus. C. B. This hath broad leaves and a deep blue flower ſtriped.
2. Broad-leaved Crocus of the ſpring with a purple flower. C. B. This hath a plain purple flower.
3. Broad-leaved Spring Crocus with a Violet-coloured flower. C. B. This hath a large deep blue flower.
4. Spring Crocus, with a white flower and a purple bottom. C. B.
5. Broad-leaved, white, variegated, Spring Crocus. C. B.
6. Broad-leaved Spring Crocus, with many purple Violet flowers ſtriped with white. C. B.
7. Broad-leaved Spring Crocus with an Aſh-coloured flower.
8. Broad-leaved Spring Crocus with a large yellow flower. C. B.
9. Broad-leaved Spring Crocus with a ſmaller and paler yellow flower. C. B.
10. Broad-leaved Spring Crocus, with ſmaller yellow flowers ſtriped with black.
11. Narrow-leaved Spring Crocus with a ſmaller brimſtone-coloured flower.
12. Narrow-leaved Spring Crocus with a ſmall white flower.

Theſe are the principal varieties which I have obſerved in the Engliſh gardens, but there are many more mentioned in the foreign catalogues of flowers, many of which are ſo nearly alike, as ſcarce to be diſtinguiſhed; and if the ſeeds of theſe flowers were ſown, there might be a greater variety of them obtained than is at preſent; but as they propagate very faſt by offſets, the ſeeds are very rarely regarded.

All theſe ſeveral varieties of Crocuſes are very hardy, and will increaſe exceedingly by their roots, eſpecially if they are ſuffered to remain two or three years unremoved; they will grow in almoſt any ſoil or ſituation, and are very great ornaments to a garden early in the ſpring of the year, before many other flowers appear. They are commonly planted near the edges of borders on the ſides of walks; in doing of which, you ſhould be careful to plant ſuch ſorts in the ſame line as flower at the ſame time, and are of an equal growth, otherwiſe the lines will ſeem imperfect. Theſe roots, loſeing their fibres with their leaves, may then be taken up, and kept dry until the beginning of September, obſerving to keep them from vermin, for the mice are very fond of them. When you plant theſe roots (after having drawn a line upon the border,) make holes with a dibble about two inches deep or more, according to the lightneſs of the ſoil, and two inches diſtance from each other, in which you muſt place the roots with the bud uppermoſt; then with a rake fill up the holes in ſuch a manner as that the upper part of the root may be covered an inch or more, being careful not to leave any of the holes open; for this will entice the mice to them, which, when once they have found out, will deſtroy all your roots, if they are not prevented.

This is the way in which theſe flowers are commonly diſpoſed in gardens, but the better way is to plant them ſix or eight near each other in bunches between ſmall ſhrubs, or on the borders of the flower-garden; where, if the varieties of theſe flowers are planted in different patches, and properly intermixed, they will make a much better appearance than when they are diſpoſed in the old method of ſtrait edgings.

In January, if the weather is mild, the Crocus will often appear above ground; and in February their flowers will appear, before the green leaves are grown to any length, ſo that the flower ſeems at firſt to be naked; but ſoon after the flowers decay, the green leaves grow to be ſix or eight inches long, which ſhould not be cut off until they decay, notwithſtanding they appear a little unſightly; for by cutting off the leaves, the roots will be ſo weakened as not to arrive at half their uſual bigneſs, nor will their flowers the ſucceeding year be half ſo large. Their ſeeds are commonly ripe about the latter end of April, or the beginning of May, when the green leaves begin to decay.

The autumnal Crocuſes are not ſo great increaſers as are thoſe of the ſpring, nor do they produce ſeeds in our climate; ſo that they are leſs common in the gardens, except the true Saffron, which is propagated for uſe in great plenty in many parts of England; theſe muſt be taken up every third year, as was directed for the Spring Crocuſes, otherwiſe the roots will run long, and produce no flowers; but they ſhould not be kept out of the ground longer than the beginning of Auguſt, for they commonly produce their flowers the beginning of October; ſo that if they remain too long out of the ground, they will not produce their flowers ſo ſtrong, nor in ſuch plenty, as when they are planted early.

The

The method of cultivating Saffron being ſomewhat curious, I thought it not improper to inſert in this place an abſtract of it, as it was preſented to the Royal Society by Dr. James Douglaſs.

As Saffron grows at preſent moſt plentifully in Cambridgeſhire, and has grown formerly in ſeveral other counties of England, the method of culture does not, I believe, vary much in any of them, and therefore I judge it ſufficient to ſet down here the obſervations which I employed proper perſons, in different ſeaſons, to make, in the years 1723, 1724, 1725, and 1728, up and down all that large tract of ground that lies between Saffron-Walden and Cambridge, in a circle about ten miles diameter.

In that county Saffron has been cultivated, and therefore it may be reaſonably expected, that the inhabitants thereof are more thoroughly acquainted with it than they are any where elſe.

I ſhall begin with the choice and preparation of the ground. The greateſt part of the tract already mentioned is an open level country, with few incloſures; and the cuſtom there is, as in moſt other places, to crop two years, and let the land be fallow the third. Saffron is generally planted upon fallow ground, and, all other things being alike, they prefer that which has borne Barley the year before.

The Saffron grounds are ſeldom above three acres, or leſs than one; and in chooſing, the principal thing they have regard to is, that they be well expoſed, the ſoil not poor, nor a very ſtiff clay, but a temperate dry mould, ſuch as commonly lies upon chalk, and is of an Hazel colour; though if every thing elſe anſwers, the colour of the mould is pretty much neglected.

The ground being made choice of, about Lady-Day, or the beginning of April, it muſt be carefully ploughed, the furrows being drawn much cloſer together, and deeper, if the ſoil will allow it, than is done for any kind of corn; and accordingly, the charge is greater.

About five weeks after, during any time in the month of May, they lay between twenty and thirty loads of dung upon each acre, and having ſpread it with great care, they plough it in as before. The ſhorteſt rotten dung is the beſt; and the farmers, who have the conveniency of making it, ſpare no pains to make it good, being ſure of a proportionable price for it. About Midſummer they plough a third time, and between every ſixteen feet and an half, or pole in breadth, they leave a broad furrow or trench, which ſerves both as a boundary to the ſeveral parcels, when there are ſeveral proprietors to one incloſure, and to throw the weeds in at the proper ſeaſon.

To this head likewiſe belongs the fencing of the grounds, becauſe moſt commonly, though not always, that is done before they plant. The fences conſiſt of what they call dead hedges, or hurdles, to keep out not only cattle of all ſorts, but eſpecially hares, which would otherwiſe feed on the Saffron leaves during the winter.

About the weather we need not only obſerve, that the hotteſt ſummers are certainly the beſt, and therewith, if there be gentle ſhowers from time to time, they can hardly miſs of a plentiful crop, if the extreme cold, ſnow, or rain of the foregoing winter have not prejudiced the heads.

The next general part of the culture of Saffron is, planting, or ſetting the roots; the only inſtrument uſed for which is a narrow ſpade, commonly termed a ſpit ſhovel.

The time of planting is commonly in the month of July, a little ſooner or later, according as the weather anſwer. The method is this: one man with his ſpit ſhovel raiſes between three and four inches of earth, and throws it before him about ſix or more inches; two perſons, generally women, following with heads, place them in the fartheſt edge of the trench he makes, at three inches diſtance from each other, or thereabouts; as ſoon as the digger or ſpitter has gone once the breadth of the ridge, he begins again at the other ſide, and digging as before, covers the roots laſt ſet, and makes the ſame room for the ſetters to place a new row, at the ſame diſtance from the firſt, that they are from one another. Thus they go on, till a whole ridge, containing commonly one rod, is planted; and the only nicety in digging is, to leave ſome part of the firſt ſtratum of earth untouched, to lie under the roots, and, in ſetting, to place the roots directly upon their bottom.

What ſort of roots are to be preferred ſhall be ſhewn under the fourth head, but it muſt be obſerved in this place, that formerly, when roots were very dear, they did not plant them ſo thick as they do now; and that they have always ſome regard to the ſize of the roots, placing the largeſt at a greater diſtance than the ſmall ones.

The quantity of roots planted in an acre, is generally about 16 quarters, or 128 buſhels, which, according to the diſtances left between them, as before aſſigned, and ſuppoſing all to be an inch in diameter one with another, ought to amount to 392,040 in number.

From the time that the roots are planted, till about the beginning of September, or ſometimes later, there is no more labour about them; but as they then begin to ſpire, and are ready to ſhew themſelves above ground (which is known by digging a few out of the earth,) the ground muſt be carefully pared with a ſharp hoe, and the weeds, &c. raked into the furrows, otherwiſe they would hinder the growth of the plants,

In ſome time after appear the Saffron flowers, and this leads us to the third branch of our preſent method. The flowers are gathered as well before as after they are full blown, and the moſt proper time for this is early in the morning. The owners of the Saffron get together a ſufficient number of hands, who place themſelves in different parts of the field, who pull off the whole flowers, and throw them handful by handful into a baſket, and ſo continue till all the flowers are gathered, which happens commonly about ten or eleven o'clock.

Having then carried home all they have got, they immediately ſpread them upon a large table, and fall to picking out the filamenta ſtyli, or chives, and together with them a pretty long proportion of the ſtylus itſelf, or ſtring to which they are joined; the reſt of the flower they throw away as uſeleſs. The next morning they return into the field again, whether it be wet or dry weather, and ſo on daily, even on Sundays, till the whole crop be gathered.

The chives being all picked out of the flowers, the next labour about them is to dry them on the kiln. The kiln is built upon a thick plank (that it may be moved from place to place) ſupported by four ſhort legs; the outſide conſiſts of eight pieces of wood about three inches thick, in form of a quadrangular frame, about twelve inches ſquare at the bottom on the inſide, and twenty-two inches at top, which is likewiſe equal to the perpendicular height of it. On the foreſide is left a hole about eight inches ſquare, and four inches above the plank, through which the fire is put in; over all the reſt laths are laid pretty thick, cloſe to one another, and nailed to the frame already mentioned, and then are plaiſtered over on both ſides, as are alſo the planks at bottom very thick, to ſerve for a hearth. Over the mouth, or wideſt part, goes a hair cloth, fixed to the ſides of the kiln, and likewiſe to two rollers, or moveable pieces of wood, which are turned by wedges or ſcrews, in order to ſtretch the cloth. Inſtead of the hair cloth, many people now uſe a net-work, or iron wire, with which it is obſerved that the Saffron dries ſooner, and with leſs quantity of fuel; but the difficulty in preſerving the Saffron from burning, makes the hair cloth be preferred by the niceſt judges in drying.

The kiln is placed in a light part of the houſe, and they begin by laying five or ſix ſheets of white paper on the hair cloth, upon which they ſpread the wet Saffron between two and three inches thick; this they

cover

cover with other ſheets of paper, and over theſe lay a coarſe blanket five or ſix times doubled, or, inſtead thereof, a canvas pillow filled with ſtraw; and after the fire has been lighted for ſome time, the whole is covered with a board, having a large weight upon it.

At firſt they give it a pretty ſtrong heat, to make the chives ſweat (as their expreſſion is;) and in this, if they do not uſe a great deal of care, they are in danger of ſcorching, and ſo of ſpoiling all that is on the kiln.

When it has been thus dried about an hour, they take off the board, blanket, and upper papers, and take the Saffron off from that which lies next it, raiſing at the ſame time the edges of the cake with a knife; then laying on the paper again, they ſlide in another board between the hair cloth and upper papers, and turn both papers and Saffron upſide-down, afterwards covering them as above.

The ſame heat is continued for an hour longer; then they look on the cake again, free it from the papers, and turn it; then they cover it, and lay on the weight as before. If nothing happens amiſs during theſe firſt two hours, they reckon the danger to be over; for they have nothing more to do but to keep a gentle fire, and to turn their cakes every half hour till thoroughly dry, for the doing of which as it ought, there are required full twenty-four hours.

In drying the larger plump chives they uſe nothing more, but towards the latter end of the crop, when theſe come to be ſmaller, they ſprinkle the cake with a little ſmall beer, to make it ſweet as it ought; and they begin now to think, that uſing two linen cloths next the cake, inſtead of the two innermoſt papers, may be of ſome advantage in drying, but this practice is followed as yet but by few.

Their fire may be made of any kind of fuel, but that which ſmokes the leaſt is beſt, and charcoal, for that reaſon, is preferred to any other.

What quantity of Saffron a firſt crop will produce, is very uncertain; ſometimes five or ſix pounds of wet chives are got from one rood, ſometimes not above one or two, and ſometimes not enough to make it worth while to gather and dry it; but this is always to be obſerved, that about five pounds of wet Saffron go to make one pound of dry, for the firſt three weeks of the crop, and ſix pounds during the laſt week; and when the heads are planted very thick, two pounds of dried Saffron may, at a medium, be allowed to an acre for the firſt crop, and twenty-four pounds for the two remaining, the third being conſiderably larger than the ſecond.

In order to obtain theſe, there is only a repetition to be made every year of the labour of hoeing, gathering, picking, and drying, in the ſame manner as before ſet down, without the addition of any thing new, except that they let cattle into the fields, after the leaves are decayed, to feed upon the weeds, or, perhaps, mow them for the ſame uſe.

About the Midſummer after the third crop is gathered, the roots muſt be all taken up and tranſplanted; the management requiſite for which, is the fourth thing to be treated of. To take up the Saffron heads, or break up the ground (as the term is,) they ſometimes plough it, ſometimes uſe a forked kind of hoe, called a pattock, and then the ground is harrowed once or twice over; during all which time of ploughing, or digging, and harrowing, fifteen or more people will find work enough to follow and gather the heads as they are turned up.

They are next to be carried to the houſe in ſacks, and there cleaned and raſed; this labour conſiſts in cleaning the roots thoroughly from earth, and from the remains of old roots, old involucra, and excreſcences, and thus they become fit to be planted in new ground immediately, or to be kept for ſome time without danger of ſpoiling.

The quantity of roots taken up, in proportion to thoſe which were planted, is uncertain; but at a medium, it may be ſaid, that allowing for all the accidents which happened to them in the ground, and in breaking up from each acre, may be had twenty-four quarters of clean roots, all fit to be planted.

The owners are ſure to chooſe for their own uſe the largeſt, plumpeſt, and fatteſt roots, but do leaſt of all approve the longeſt pointed ones, which they call ſpickets, or ſpickards, for very ſmall, round, or flat roots, are ſometimes obſerved to flower well.

This is the whole culture of Saffron in the county above-mentioned, and we have only now to conſider the charges and profits which may be ſuppoſed, one year with another, to attend that branch of agriculture; and of theſe I have drawn up the following computation for one acre of ground, according to the price of labour in this country.

	l.	s.	d.
Rent for three years — — —	3	0	0
Ploughing for three years — —	0	18	0
Dunging — — — — —	3	12	0
Hedging — — — — —	1	16	0
Spitting and ſetting the heads —	1	12	0
Weeding or paring the ground —	1	4	0
Gathering and picking the flowers	6	10	0
Drying the flowers — — — —	1	6	0
Inſtruments of labour for three years, with the kiln, about — —	0	10	0
Ploughing the ground once, and harrowing twice — — — —	0	12	0
Gathering the Saffron heads — —	1	0	0
Raiſing the heads — — — —	1	12	0
Total charge	23	12	0

This calculation is made upon ſuppoſition, that an acre of ground yields twenty-ſix pounds of nett Saffron in three years, which I ſtated only as a mean quantity between the greateſt and the leaſt, and therefore the price of Saffron muſt be judged accordingly, which I think cannot be done better than by fixing it at 30 ſhillings per pound; ſince in very plentiful years it is ſold at twenty, and is ſometimes worth between three and four pounds; at this rate, twenty-ſix pounds of Saffron are worth thirty-nine pounds, and the nett profits of an acre of ground producing Saffron, will, in three years, amount to fifteen pounds, thirteen ſhillings, or about five pounds four ſhillings yearly.

This, I ſay, may be reckoned the nett profit of an acre of Saffron, ſuppoſing that all the labour were to be hired for ready money; but as the planter and family do a conſiderable part of the work themſelves, ſome of this expence is ſaved; that is, by planting Saffron, he may not only reaſonably expect to clear about five pounds yearly per acre, but alſo to maintain himſelf and family for ſome part of each year; and it is upon this ſuppoſition only, that the reſult of other computations can be ſaid to have any tolerable degree of exactneſs, but the calculations themſelves are undoubtedly very inaccurate.

I have ſaid nothing here concerning the charge in buying, or profits in ſelling, the Saffron heads, becauſe, in many large tracts of ground, theſe muſt at length balance one another, while the quantity of ground planted yearly continues the ſame, which has been pretty much the caſe for ſeveral years paſt.

Dr. Patrick Blair, deſigning to treat concerning the Crocus, in his ſixth Decad of his Pharmaco-Botanologia, did, in the year 1725, ſend to me the following queries:

1. After what manner the ſpecies are propagated?
2. Whether the tap-root ſprings firſt, or the bulb?
3. At what ſeaſon the leaves ſpring forth?

To theſe queries I ſent him the following anſwer:

1. As to the propagation of the ſpecies.

This is only by the roots or offsets, which the old roots produce in great plenty, for I never ſaw any thing like a ſeed, or a ſeed-veſſel produced, though I have let ſtand great quantities of flowers purpoſely to try.

2. As to the query, Whether the tap-root ſprings firſt, and the bulb be afterwards formed?

As ſoon as the roots begin to ſhoot upwards, there are commonly two or three large tap-roots ſent forth from the ſide of the old root, which will run downright two inches and a half or more, into the ground; at the place where theſe bulbs firſt come out from the old one, will be formed a bulb ſometimes (though not always, as you will hear preſently;) and this tap-root decays. The bulb will increaſe in its bigneſs, till at laſt it quite falls off, and is then left entire, which commonly happens in April, when the green begins to decay; but many times theſe tap or carrotty roots never produce any bulbs, but always retain the ſame figure, and for ever after, I believe are barren; for I planted a parcel of theſe carrotty roots four years ago in a little bed, where they have ever ſince remained, but have not produced one ſingle flower, notwithſtanding they have produced a numerous offspring of the ſame carrotty roots.

And the people about Saffron Walden are well appriſed of this barrenneſs, and therefore throw away all ſuch roots when they make a new plantation; but as this change of the root is not peculiar to the Saffron only, permit me to digreſs a little, to give you ſome account of this matter.

In the pariſh of Fulham, near London, the gardeners uſed to drive a great trade in the Jonquil, or Narciſſus juncifolius, flore multiplici, at which place the greateſt quantity of thoſe roots was raiſed for ſale, as perhaps was in any part of England, and turned to as great account for the maſter, as any crop they could employ their ground in, till of late years, that moſt of their roots have turned carrotty, and ſo proved barren, or have produced only ſingle flowers; ſo that the gardeners being hereby diſheartened, have thrown them out entirely, neglecting to cultivate them, ſatisfying themſelves with this reaſon, that their ground was tired with them.

But to return to the Crocus. Beſides thoſe roots already mentioned, there will be three or four ſmall bulbs formed upon the upper part of the root, and ſome underneath, which from the firſt appearance aſſume the round ſhape of its parent root, and have no tap-root belonging to them; thoſe on the upper part of the root rarely emit ſo much as a fibre, but receive their nouriſhment immediately from the old root; but thoſe on the under ſide ſend out many fibres all around, by which they draw their nouriſhment from the ground; theſe being parted from the old root much ſooner than the other, ſtand in need of fit organs for receiving their nouriſhment.

I have ſometimes taken up ſome, through the middle of which hath been a root of the Gramen caninum, or Couch Graſs, which ſome people have imagined had ſtrength enough to force its way through the Crocus root; but the truth is, the root of the Graſs cloſely adhering to the old root of the Crocus, juſt at the place where the young roots were emitted, theſe young roots being quick of growth, incloſed the root of the Graſs, and thus I have ſeen ſeveral roots run through each other in the ſame manner.

But beſides theſe offsets mentioned, directly upon the upper part of the root is one large root formed, of equal bigneſs with the old one, and this is the time that the root is Radix gemina, as Tournefort calls it; for they are not ſo at any other ſeaſon, and therefore I think it a very improper appellation; for when the new roots are perfectly formed, the old ones, with their coats, fall off and die, and leave the new roots all ſingle. This has occaſioned ſeveral people to doubt of what Tournefort had ſaid of the roots, till I took up ſome plants at that ſeaſon, and with them the two roots of equal bigneſs, i. e. the old at the bottom, and the new one at the top.

Dr. Blair alſo happening, in viewing a root, to be ſurpriſed with a different appearance from what he had ſeen before or heard of, ſent me another letter.

The manner of the root was thus; from the upper part of the bulb, where it ſends forth all the leaves within a common tunicle, at the exit there was an appendix about an inch and a half long, about the groſſneſs of a large turkey or gooſe-quill, cylindrical and blunt, without the leaſt radical fibre, by which it might receive the nouriſhment, ſmooth or poliſhed, and bluiſh in the ſurface, conſiſting of ſeveral circular lines, when cut tranſverſly; white, with a hard greeniſh center like a Carrot, when it hath puſhed forth the flowering-ſtem, not unlike the ſtolones of of ſome running root, ſuch as the Mints below ground, only the extremity deſcended obliquely, inſtead of aſcending, to ſend forth leaves to produce a new plant; and what is moſt remarkable, this did not happen to one or two plants, but to the whole bundle, which were above twenty diſtinct roots, differing in nothing but majus and minus; the bulb ſeemed at the ſame time to be pined and emaciated, though it emitted large radical fibres like thoſe of a Leak.

I having received this account from him by letter, ſent him the following anſwer:

I received yours in anſwer to my laſt, with the figure of the roots of ſome ſets of Crocus Autumnalis you have taken out of the ground; I have found a figure in Dodonæus which correſponds with it, and thoſe roots are no new thing with the Saffron gardeners, who always throw them away when they make freſh plantations.

Your figure does not agree with my tap-roots, as you will ſee by the figure taken as juſt from the life as I could. In mine you will find the bulb turned ſideways, which I ſtill find to be conſtant in all the roots I have examined, which have been a great many, and makes me ſuſpect theſe tap-roots are occaſioned by the accidental poſition of the roots in planting, which may retard the aſcending ſap, the flowering-ſtem being thereby turned into a crooked figure, and the tap-roots are full of longitudinal veſſels, of a conſiderable dimenſion; ſo that the greater attracting power of the ſap being hereby diverted downwards, the flower-ſtem may be quite deſtitute of proper nouriſhment.

The method you propoſe to remedy this inconveniency, will not do, for I have removed ſome of theſe roots at the ſeaſon when the tap-roots were forming, and this alone deſtroyed them all; ſo that I am perſuaded, the cutting them off entirely will kill them.

The method I uſed with the Jonquils was, to lay ſome tiles juſt under the roots, to prevent their running downwards, but this has not anſwered, nor do I think it poſſible wholly to recover them; for the alteration is not only in the root and flower, but alſo in the leaf and blade, which before was fiſtulous, but after this alteration in the root, becomes a plain ſulcated leaf, and if it ever bloſſoms after, the flowers are large and ſingle, which before were ſmall and double; but the Saffron, after the change of its roots, produces a ſmall narrow blade, ſeldom half the length of thoſe in a natural ſtate.

Upon this Dr. Blair formed this concluſion:

Theſe additional obſervations plainly ſhew, that neither the carrotty root, nor the blaſted tap-root, as I may call it, are merely accidental, or what may be called luſus naturæ, but certain diſeaſes incident to ſuch roots; for were they accidental, they would not have the ſame appearances to different perſons in different ſoils and climates, nor would ſo many taken up together have ſuch a reſemblance to each other, as I have twice obſerved.

CROTOLARIA. Lin. Gen. Plant. 771. Dill. Elth. 122. Tourn. Inſt. R. H. 644. [of Κρόταλον, *Gr.* rattle; becauſe its ſeeds in the pods, when ripe, make a rattling noiſe when ſhaken, or becauſe the infants of the Indians make uſe of the branches of this plant furniſhed with pods inſtead of rattles.]

The CHARACTERS are,

The empalement of the flower is divided into three large ſegments; the two upper reſting on the ſtandard, the lower is concave, trifid, and is ſituated below the keel. The flower is of the Butterfly kind; the ſtandard is large, heart-ſhaped and pointed; the wings are oval and half the length of the ſtandard; the keel is pointed and as long as the wings; it hath ten ſtamina which are united, terminated

minated by ſingle ſummits, and an oblong reflexed germen, ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes a ſhort turgid pod with one cell, opening with two valves, and filled with kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria the flowers of this claſs and ſection having ten ſtamina joined in two bodies.

The SPECIES are,

1. CROTOLARIA (*Verrucoſa*) foliis ſimplicibus ovatis, ſtipulis lunatis declinatis ramis tetragonis. Flor. Zeyl. 277. *Crotolaria with ſingle oval leaves, lunated declining ſtipulæ, and four-cornered branches.* Crotolaria Aſiatica folio ſingulari verrucoſo, floribus cæruleis. H. L. 199.
2. CROTOLARIA (*Piloſa*) foliis ſimplicibus lanceolatis piloſis, petiolis decurrentibus. *Crotolaria with ſingle, hairy, ſpear-ſhaped leaves, and running foot-ſtalks.* Crotolaria Americana, caule alato foliis piloſis, floribus in thyrſo luteis. Martyn. Cent. 43.
3. CROTOLARIA (*Sagittalis*) foliis ſimplicibus lanceolatis ſtipulis ſolitariis decurrentibus bidentatis. Hort. Cliff. 357. *Crotolaria with ſingle ſpear-ſhaped leaves, and ſingle ſtipulæ indented.* Crotolaria hirſuta minor Americana herbacea, caule ad ſummum ſagittato. H. L. 202.
4. CROTOLARIA (*Fruticoſa*) foliis ſimplicibus, linearilanceolatis hirſutis, petiolis decurrentibus, caule fruticoſo. *Crotolaria with ſingle, narrow, ſpear-ſhaped leaves, which are hairy, running foot-ſtalks, and a ſhrubby ſtalk.* Crotolaria fruteſcens hirſuta, flore luteo, ramulis alatis, foliis mucronatis. Houſt. MSS.
5. CROTOLARIA (*Juncea*) foliis ſimplicibus lanceolatis, petiolatis caule ſtriato. Hort. Cliff. 357. *Crotolaria with ſingle ſpear-ſhaped leaves having foot-ſtalks.* Crotolaria Benghalenſis foliis geniſtæ hirſutis. Pluk. Alm. 121.
6. CROTOLARIA (*Perfoliata*) foliis perfoliatis cordato-ovatis. Lin. Sp. Plant. 1005. *Crotolaria with oval heart-ſhaped leaves perforated by the ſtalks.* Crotolaria perfoliatæ folio. Hort. Elth. 122. tab. 102.
7. CROTOLARIA (*Retuſa*) foliis ſimplicibus, oblongis cuneiformibus retuſis. Flor. Zeyl. 276. *Crotolaria with ſingle, oblong, wedge-ſhaped leaves, reflexed at the top.* Crotolaria Aſiatica, floribus luteis, folio ſingularo cordiformi. H. L. 200.
8. CROTOLARIA (*Villoſa*) foliis ſimplicibus ovatis villoſis, petiolis ſimpliciſſimis, ramis teretibus. Hort. Cliff. 357. *Crotolaria with ſingle, oval, hairy leaves, ſingle pedicles and taper branches.* Crotolaria arboreſcens Africana, Styracis folio. H. L. 170.
9. CROTOLARIA (*Angulata*) foliis ovatis ſeſſilibus, ramulis angulatis hirſutis, floribus lateralibus ſimpliciſſimis. *Crotolaria with oval leaves ſitting cloſe to the branches, which are angular, hairy, and ſingle flowers proceeding from the ſides of the branches.*
10. CROTOLARIA (*Laburnifolia*) foliis ternatis ovatis acuminatis, ſtipulis nullis, leguminibus pedicillatis. Flor. Zeyl. 278. *Crotolaria with oval, trifoliate, pointed leaves, no ſtipula, and foot-ſtalks to the pods.* Crotolaria Aſiatica fruteſcens, floribus luteis amplis trifoliata. H. L. 196.
11. CROTOLARIA (*Alba*) foliis ternis lanceolato-ovatis, caule lævi herbaceo, racemo terminali. Hort. Cliff. 499. *Crotolaria with oval, ſpear-ſhaped, ternate leaves, ſmooth herbaceous ſtalks, which are terminated by looſe ſpikes of flowers.* Anonis Caroliniana perennis non ſpinoſa, foliorum marginibus integris, floribus in thyrſo candidis. Martyn. Cent. 44.

The firſt ſort grows naturally in India. This is an annual plant, which hath an herbaceous four-cornered ſtalk, riſing about two feet high, dividing into three or four branches; theſe have alſo four acute angles, and are garniſhed with oval warted leaves, of a pale green colour, ſtanding on very ſhort foot-ſtalks; the flowers are produced in ſpikes at the end of the branches, which are of the butterfly ſhape, and of a light blue colour, ſucceeded by ſhort turgid pods, which incloſe one row of kidney-ſhaped ſeeds. It flowers in July and Auguſt, and the ſeeds ripen in autumn.

This plant is propagated by ſeeds, which muſt be ſown upon a hot-bed in the ſpring, and when the plants are come up an inch high, they ſhould be tranſplanted to another hot-bed to bring them forward, obſerving to ſhade them from the ſun till they have taken new root; after which they ſhould have free air admitted to them in proportion to the warmth of the ſeaſon, to prevent their being drawn up weak. When the plants have acquired ſtrength in this bed, they ſhould be carefully taken up, with balls of earth to their roots, and each planted in a ſeparate pot, filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark, carefully ſhading them till they are rooted again; then they muſt be treated in the ſame manner as other tender exotic plants, giving them proper air and water in warm weather; when the plants are grown ſo tall as to nearly reach the glaſſes of the hot-bed, the pots may be removed into an airy glaſs-caſe, or ſtove, where they may be ſcreened from inclement weather, and have proper air in hot weather; with this treatment the plants will flower in July, and continue to produce freſh ſpikes of flowers till the end of Auguſt; and thoſe ſpikes of flowers which appear early in the ſeaſon, will be ſucceeded by ripe ſeeds in September, ſoon after which the plants will decay.

The ſecond ſort grows naturally at La Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a compreſſed winged ſtalk near three feet high, putting out ſeveral ſide branches, garniſhed with ſpear-ſhaped leaves near three inches long, and one broad, covered with ſoft hairs, and ſit cloſe to the branches, alternately; from the foot-ſtalks of each there runs a border or leafy wing, along both ſides of the branches; the flowers are produced in looſe ſpikes at the end of the branches, which are of a pale yellow colour, the ſtandard being ſtretched out a conſiderable length beyond the wings. Theſe are ſucceeded by ſhort turgid pods, which, when ripe, are of a deep blue colour, having one row of ſmall kidney-ſhaped ſeeds, which are of a greeniſh brown colour. This flowers and ſeeds about the ſame time with the former, and requires the ſame treatment.

The third ſort was ſent me from South Carolina by the late Dr. Dale, and alſo from Jamaica by Dr. Houſtoun, ſo that it grows naturally in ſeveral parts of America; this is an annual plant, which riſes with a ſlender ſtalk a foot and a half high, dividing into three or four ſpreading branches, garniſhed with oblong oval leaves ſitting cloſe. The upper part of the branches have two leafy borders or wings, running from one leaf to the other, but the lower part of the branches have none; the foot-ſtalks of the flowers ariſe from the ſide of the ſtalk, thoſe from the lower part of the branches are above a foot long, the upper are about ſix inches, they are very ſlender, and ſuſtain one or two pale yellow flowers at their tops, which are not more than half ſo large as the former ſort, and are ſucceeded by very ſhort turgid pods, in which are incloſed three or four ſmooth kidney-ſhaped ſeeds. This ſort requires the ſame culture as the two former, and flowers at the ſame ſeaſon.

The fourth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby taper ſtalk near four feet high, ſending out many ſide branches which are very ſlender, ligneous, and covered with a light brown bark, garniſhed with very narrow ſpear-ſhaped leaves, which are hairy, ſitting cloſe to the branches; the younger ſhoots have a leafy border or wing on two ſides, but the old branches have none; the flowers are produced near the end of the branches, three or four growing alternate on a looſe ſpike; they are of a dirty yellow, and ſmall; the pods which ſucceed them are about an inch long, very turgid, and of a dark blue when ripe. This ſort is propagated by ſeed, which ſhould be ſown on a hot-bed, and the plants treated

treated in the ſame manner as thoſe before; but in autumn they ſhould be placed in the ſtove, where they will live through the winter, and flower early the following ſummer, ſo will perfect their ſeeds very well.

The ſeeds of the fifth ſort were brought me from the coaſt of Malabar, which ſucceeded in the Chelſea garden. This riſes with an angular ſtalk near four feet high, dividing upward into three or four branches, garniſhed with narrow ſpear-ſhaped leaves, placed alternately on very ſhort foot-ſtalks; they are pretty cloſely covered with ſoft ſilvery hairs. The flowers are produced at the end of the branches, in looſe ſpikes; they are large, and of a deep yellow colour, and the ſtyle ſtands out beyond the ſtandard. The flowers are ſucceeded by large turgid pods, containing one row of large kidney-ſhaped ſeeds.

This plant is annual in England, but by the lower part of the ſtalk growing woody, it appears to be of longer duration in the country where it naturally grows; though it will not live through the winter here, for if the plants are placed in a ſtove, the heat is too great for them, and in a green-houſe they are very ſubject to mouldineſs in damp weather. I have ſown the ſeeds of this in the full ground, where the plants have grown upward of three feet high, and have flowered very well, but no pods were formed on theſe; and when they have been treated tenderly, the plants have grown much larger, and produced a greater number of flowers, but theſe have produced no ſeeds. The only way which I could ever obtain any ſeeds, was by raiſing the plants in pots upon hot-beds; and the beginning of July, turning them out of the pots into the full ground on a very warm border under a wall, in which ſituation they flowered very well, and ſome few pods of ſeeds were ripened.

The ſixth ſort was ſent me by the late Dr. Dale from South Carolina, who had the ſeeds ſent him from the country, at a great diſtance from the Engliſh ſettlements. By the deſcription ſent me with the ſeeds, it grows with a ſhrubby ſtalk four or five feet high; but the plants which were raiſed here, periſhed at the approach of winter, ſo that they only flowered, without producing any pods. The ſtalks of this are round, and covered with a light brown bark, garniſhed with ſmooth, oval, heart-ſhaped leaves, which are about four inches long, and near three broad; ſurrounding the ſtalk in ſuch a manner, as if it were run through the middle of the leaves. The flowers grow ſingly, ſitting cloſe to the boſom of each leaf, toward the upper part of the branches; they are of a pale yellow colour, and appear here in Auguſt; but as the plants did not produce any pods, ſo I can give no account of them. This is one of the moſt ſingular plants of the genus I have yet ſeen.

The ſeventh ſort riſes with an herbaceous ſtalk near three feet high, dividing upward into ſeveral branches, garniſhed with oblong leaves, which are narrow at their baſe, but gradually widen to the top, where they are rounded and indented in the middle in the ſhape of a heart; they are of a pale green, and ſmooth. The flowers are produced in ſpikes at the end of the branches, they are pretty large, and of a yellow colour. Theſe appear in July, and the ſeeds ripen in autumn, provided the plants are brought forward in the ſpring, and afterward treated in the ſame manner as hath been directed for the firſt ſort. This grows naturally in the iſland of Ceylon, and is an annual plant, periſhing ſoon after it perfects ſeeds. I received the ſeeds of this plant from the late Dr. Boerhaave, profeſſor at Leyden.

The eighth ſort grows naturally at the Cape of Good Hope, from whence I received the ſeeds. This riſes with a ſhrubby ſtalk about five feet high, dividing into ſeveral branches, garniſhed with roundiſh leaves, ſitting cloſe to the branches; they are of a hoary green, and ſoft to the touch, the branches are taper and ſmooth; the flowers are produced at the end of the branches in looſe ſpikes; they are about the ſize of thoſe of the firſt ſort, and of a fine blue cour.

This plant flowers in June and July, and in warm ſeaſons will ripen its ſeeds in autumn. It is propagated by ſeeds, which muſt be ſown upon a good hot-bed in the ſpring, and when the plants are fit to remove, ſhould be each tranſplanted into a ſmall halfpenny pot, and plunged into a hot-bed of tanners bark, and after muſt be treated in the ſame manner as hath been directed for the fourth ſort, placing the plants in a moderate ſtove in winter, otherwiſe they cannot be preſerved in England; the ſecond year the plants will flower, and with proper care their ſeeds will ripen.

The ninth ſort was ſent me from Campeachy, where the plant grows naturally; this riſes with a taper upright ſtalk near three feet high, dividing upward into ſeveral hairy branches, which grow erect, garniſhed with oval ſpear-ſhaped leaves, of a pale green colour; the flowers are produced ſingly from the ſide of the branches, which are of a bright yellow, and are ſucceeded by ſhort turgid pods, having one row of kidney-ſhaped ſeeds. It flowers in July and Auguſt, and with the ſame treatment as hath been directed for the firſt ſort, will perfect ſeeds in autumn. This is an annual plant, which periſhes ſoon after the ſeeds are ripe.

The tenth ſort grows naturally in India; this riſes with a ſhrubby ſtalk four or five feet high, dividing into many branches, garniſhed with ternate oval leaves ending in points; the flowers are large, yellow, growing in large bunches from the ſide of the branches; they appear in July, Auguſt, and September, but I have not ſeen any pods ſucceed them here. However, when the plants are in flower, they make a fine appearance.

It is eaſily propagated by cuttings, during the ſummer months, if the cuttings are planted in pots, and plunged into a moderate hot-bed, being careful to ſhade them till they have taken root, and frequently refreſh them with water: during the months of July, Auguſt, and September, the plants may be expoſed to the open air in a ſheltered ſituation, where they will produce many flowers; but in the autumn they ſhould be placed in a temperate ſtove, to preſerve them in winter.

The eleventh ſort grows naturally in Virginia and Carolina, from both thoſe countries I have received the ſeeds; there are two varieties of this ſpecies, one with a white, and the other a blue flower; but the ſeeds of one will produce both varieties, as I have more than once experienced. The root is perennial, ſending up every ſpring a number of leaves, in proportion to the ſize of the root; the foot-ſtalks of the leaves are ſmooth, riſing two feet high, dividing upward into three or five branches, garniſhed with ternate ſmooth leaves, whoſe lobes are oval, ſpear-ſhaped, and entire; the foot-ſtalks of the flowers ariſe immediately from the root, and advance rather higher than the leaves, being terminated by a thyrſe of large butterfly-ſhaped flowers, near a foot in length; in one variety they are white, and in the other deep blue: theſe are ſucceeded by large ſwelling pods, of a black colour when ripe, having one row of kidney-ſhaped ſeeds. It flowers in June, and the ſeeds ripen in the autumn.

It is propagated by ſeeds, which ſhould be ſown on a moderate hot-bed in the ſpring; when the plants come up they ſhould have free air admitted to them daily, to prevent their drawing up weak, and as ſoon as they are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, plunging them into a moderate hot-bed again, obſerving to ſhade them till they have taken freſh root; then they ſhould be gradually inured to the open air; but in the autumn they ſhould be placed in a common frame, or covered with mats in winter to ſhelter them; but the following ſpring they ſhould be turned out of the pots, and planted in the full ground, where, if the ſoil is dry, and the ſituation ſheltered, they will live many years, producing flowers and ſeeds annually.

As moſt of theſe plants are annual, ſo they require to be brought forward in the ſpring, otherwiſe the ſummers are too ſhort for them to perfect ſeeds; ſo that unleſs they are carefully managed, they will not flower well here; for in general, the ſummers in this country are not very favourable for theſe tender plants. Therefore in order to have theſe tender annual plants in perfection, there ſhould be a low glaſs-caſe erected about five or ſix feet high, which ſhould be made with glaſſes to open or ſlide down on every ſide, as ſhould alſo the top on both ſides, having ſliding glaſſes, that the plants may have ſun and air on every ſide; in this there ſhould be a pit for tanners bark to make a hot-bed, the whole extent, (a particular deſcription of which will be exhibited under the article STOVE) in this hot-bed may be placed all the very curious tender annual plants, where the ſun will conſtantly ſhine on them, ſo long as he makes his appearance above the horizon; and here they may have plenty of free air admitted at all times, when the weather is warm, ſo may be brought to equal perfection, as in the warm countries where they naturally grow; for the warmth of the tan to the roots, and the heat of the ſun through the glaſſes, will in ſummer, be equal to the heat of moſt countries.

Theſe plants naturally grow on ſandy light ſoils, ſo they ſhould always be planted in ſuch; and the pots in which they are planted, muſt not be too large, for in ſuch they will not thrive, ſo that after they have filled the ſmall pots with their roots in which they were firſt planted, they ſhould be ſhaken out of thoſe, and put into penny pots, which will be large enough for moſt of the annual kinds; but thoſe which are of longer duration, will require pots a little larger the following ſpring The waterings of theſe plants ſhould be performed with caution, for too great moiſture will rot the fibres of their roots; ſo that in ſummer, if they are gently watered three or four times a week in hot weather, it will be ſufficient.

CROTON. Lin. Gen. Plant. 960. Ricinoides. Tourn. Inſt. 655. tab. 423. Baſtard Ricinus.

The CHARACTERS are,

It hath male and female flowers in the ſame plant; the flowers have a five-leaved empalement, they have five petals, thoſe of the male being no larger than the leaves of the empalement; the male have five nectarious glands, which are ſmall, and fixed to the receptacle; theſe have ten or fifteen ſtamina, which are joined at their baſe, and terminated by twin ſummits. The female flowers have a roundiſh germen, ſupporting three reflexed ſpreading ſtyles, crowned by bifid reflexed ſtigmas; the germen afterward becomes a roundiſh three-cornered capſule, with three cells, each containing a ſingle ſeed.

This genus of plants is ranged in the ninth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Monodelphia. The plants of this claſs and ſection have male and female flowers in the ſame plant, and the male parts are joined in one body.

The SPECIES are,

1. CROTON (*Tinctorium*) foliis rhombeis repandis, capſulis pendulis caule herbaceo. Hort. Upſal. 290. *Croton with rhomboid reflexed leaves, pendulous capſules, and an herbaceous ſtalk.* Ricinoides ex quâ paratur. Tournſol. Gallorum. Tourn. Inſt. 655. *Baſtard Ricinus, from which the Tournſole of the French is made.*
2. CROTON (*Argenteum*) foliis cordato-ovatis ſubtus tomentoſis integris ſubſerratis. Hort. Cliff. 444. *Croton with oval heart-ſhaped leaves, which are entire and woolly.* Ricinoides herbacea, folio ſubrotundo ſerrato fructu parvo conglomerato. Houſt. MSS.
3. CROTON (*Paluſtre*) foliis ovato-lanceolatis plicatis ſerratis ſcabris. Hort. Cliff. 445. *Croton with oval ſpear-ſhaped leaves, which are plaited, ſawed, and rough.* Ricinoides paluſtre, foliis oblongis ſerratis fructu hiſpido. Martyn. Cent. 38.
4. CROTON (*Lobatum*) foliis inermi-ſerratis, inferioribus quinquelobis, ſuperioribus trilobis. Hort. Cliff. 445. *Croton with leaves ſmoothly ſawed, the lower ones having five lobes, and the upper three.* Ricinoides herbacea, foliis trifidis vel quinquefidis & ſerratis. Houſt. MSS.
5. CROTON (*Humile*) tetraphyllum, foliis lanceolatis, acuminatis ſubtus cæſiis, caule herbaceo ramoſo. *Four-leaved Croton with ſpear-ſhaped pointed leaves, gray on their under ſide, and a branching herbaceous ſtalk.* Ricinoides humilis foliis oblongis acuminatis, ſubtus cæſiis. Houſt. MSS.
6. CROTON (*Fruticoſum*) foliis lanceolatis glabris, caule fruticoſo, floribus alaribus & terminalibus. *Croton with ſmooth ſpear-ſhaped leaves, a ſhrubby ſtalk, and flowers growing from the ſides and tops of the branches.* Ricinoides fruteſcens, lauri folio, calyce ampliſſimo viridi. Houſt. MSS.
7. CROTON (*Populi folia*) foliis cordatis, acuminatis, ſubtus tomentoſis, floribus alaribus ſeſſilibus, caule fruticoſo. *Croton with heart-ſhaped pointed leaves, woolly on their under ſide, and flowers growing cloſe to the ſides of the ſtalks, which are ſhrubby.* Ricinoides foliis populi hirſutis. Plum. Cat. 20.
8. CROTON (*Caſcarilla*) foliis lanceolatis acutis integerrimis petiolatis ſubtus tomentoſis, caule arboreo. Amœn. Acad. 5. p. 411. *Croton with ſpear-ſhaped, entire, acute-pointed leaves, woolly on their under ſide, and a tree-like ſtalk.* Ricinoides fruteſcens odorata, foliis anguſtis ſubtus albicantibus. Houſt. MSS. Caſcarilla.
9. CROTON (*Althæafolia*) foliis oblongo-cordatis tomentoſis, caule fruticoſo ramoſo, floribus ſpicatis terminalibus. *Croton with oblong, heart-ſhaped, woolly leaves, a ſhrubby branching ſtalk, and flowers growing in ſpikes at the ends of the branches.* Ricinoides Americana fruteſcens, Althææ folio. Plum. Cat. 20.
10. CROTON (*Salviæ folia*) foliis cordatis acutis, ſubtus tomentoſis, caule fruticoſo, floribus ſpicatis terminalibus & alaribus. *Croton with pointed heart-ſhaped leaves, woolly on their under ſide, a ſhrubby ſtalk, and flowers growing in ſpikes on the tops and ſides of the branches.* Ricinus ſalviæ folio utrinque molli. Pet. Hort. Siec.

The firſt ſort grows naturally in the ſouth of France, from whence I have frequently received the ſeeds; this is an annual plant, which riſes with an herbaceous branching ſtalk about nine inches high, garniſhed with irregular, or rhomboidal figured leaves, which are near two inches long, and one inch and a quarter broad in their wideſt part; theſe ſtand upon ſlender foot-ſtalks, near four inches long. The flowers are produced in ſhort ſpikes from the ſide of the ſtalks, at the end of the branches; the upper part of the ſpike is compoſed of male flowers, having many ſtamina, which coaleſce at the bottom; the lower part hath female flowers, which have each a roundiſh three-cornered germen; theſe afterward become a roundiſh capſule with three lobes, having three cells, each including one roundiſh ſeed. This flowers in July, but unleſs the plants are brought forward in a hot-bed, they do not ripen ſeeds in this country.

The ſeeds of this plant ſhould be ſown in the autumn, ſoon after they are ripe, in a ſmall pot filled with light earth, and plunged into an old tan-bed in a frame, where they may be ſcreened from cold in the winter; and in the ſpring following the pot ſhould be removed to a freſh hot-bed, which will bring up the plants in a month's time; when theſe are grown large enough to remove, they ſhould be each planted in a ſmall pot, and plunged into a freſh hot-bed, being careful to ſhade the glaſſes daily, until the plants have taken new root; then they ſhould have air daily admitted according to the warmth of the ſeaſon, and but little water given to them: with this management I have had the plants flower and produce good ſeeds here, but never could obtain any with other treatment.

This is the plant from which the Tournſole is made, which is uſed for colouring wines and jellies; it is made of the juice which is lodged between the empalement and the ſeeds, which, if rubbed on cloths, at firſt appears of a lively green, but ſoon changes to a bluiſh purple colour; if theſe cloths are put into water, and afterward wrung, they will dye the water to a claret colour; the rags thus dyed, are brought

to England, and ſold in the druggiſts ſhops by the name of Tournſole.

The ſecond ſort grows naturally at La Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this is an annual plant, which riſes about a foot high; it hath an angular ſtalk; the branches are naked from their diviſions to the top, where they are garniſhed with a few oval ſpear-ſhaped leaves, which are ſawed on their edges; they are an inch and a half long, and three quarters of an inch broad, ſtanding on foot-ſtalks one inch long. The flowers are produced in cloſe ſhort ſpikes at the end of the branches, thoſe on the upper part being male, and the lower female; they are white, and the male ſoon falls away, but the female are ſucceeded by roundiſh capſules, having three lobes; theſe grow in cloſe cluſters, they have three cells, each containing one roundiſh ſeed. It flowers in July, and the ſeeds ripen in autumn.

The third ſort was diſcovered by the late Dr. Houſtoun at La Vera Cruz, from whence he ſent me the ſeeds; this is alſo an annual plant, which grows naturally in low marſhy grounds, where it hath a very different appearance from what it puts on when ſown upon dry land; thoſe of the watery places have broad flat ſtalks, and leaves three inches long, which are ſcarce a quarter of an inch broad; theſe are rough, and but little indented on their edges; but thoſe plants upon dry ground have oval leaves three inches long, and upwards of two inches broad, which are ſawed on their edges. The flowers are produced at the wings of the leaves, in ſhort looſe ſpikes, having four or five herbaceous male flowers at the top of each, and three or four female flowers at the bottom, which are ſucceeded by roundiſh capſules with three lobes, covered with a prickly huſk; theſe have three cells, each incloſing a ſingle ſeed. It flowers and ſeeds about the ſame time as the former.

The fourth ſort was diſcovered by the ſame gentleman, at the ſame place as the former; this is an annual plant, which riſes with a taper herbaceous ſtalk a foot and a half high, dividing into ſeveral branches, garniſhed with ſmooth leaves, ſtanding upon very long foot-ſtalks, and are for the moſt part placed oppoſite, as are alſo the branches; the lower leaves are divided deeply into five oblong ſegments or lobes, and the upper into three, which are ſlightly ſawed on their edges, ending in acute points. The flowers are produced in looſe ſpikes at the end of the branches, thoſe on the upper part being male, and the lower female, they are of an herbaceous colour; the female flowers are ſucceeded by oblong capſules, having three lobes, which open in three parts, having three cells, each containing one oblong ſeed. This flowers and ſeeds at the ſame time as the former ſorts.

The fifth ſort was found growing naturally at the Havannah, by the late Dr. Houſtoun, who ſent me the ſeeds; this is an annual plant, which rarely grows more than ſix inches high, dividing into two or three branches; the lower part of theſe are garniſhed at each joint with four leaves placed in form of a croſs, two of which are three inches long, and one inch broad near their baſe, ending in acute points; theſe ſtand oppoſite, and the other two leaves between theſe are about two inches long, and a quarter of an inch broad; they are of a light green on their upper ſide, and of a gray or Aſh-colour on their under. The flowers are produced in long looſe ſpikes at the top of the ſtalks, two or three of theſe ſpikes ariſing from the ſame joint; the upper part of theſe ſpikes have male, and the lower female flowers, of an herbaceous colour; the female flowers are ſucceeded by round capſules with three cells, each containing one roundiſh ſeed. This flowers and ſeeds about the ſame time with the former ſorts.

The ſixth ſort was diſcovered by the late Dr. Houſtoun in the iſland of Jamaica, where it grows naturally. It riſes with a ſhrubby ſtalk to the height of ſeven or eight feet, which is covered with an Aſh-coloured bark, and divides into many ſlender branches upward; ſome of theſe branches are terminated by five or ſix ſmaller, which ariſe from the ſame joint; theſe are naked below, but toward their upper part they are garniſhed with ſmooth ſpear-ſhaped leaves, about two inches and a half long, and three quarters of an inch broad, ſtanding on pretty long foot-ſtalks without order; the flowers are produced in ſhort ſpikes at the end of the branches, in the ſame manner as the former; they are of an herbaceous colour, and incloſed in large green empalements.

The ſeventh ſort was ſent me from Jamaica, by Mr. Robert Millar; this riſes with a ſhrubby ſtalk ſeven or eight feet high, ſending out many irregular branches, covered with an Aſh-coloured bark, and garniſhed with heart-ſhaped leaves, near four inches long, and two inches broad in their wideſt part, ending in acute points; they are of a light green on their upper ſide, but woolly on their under, ſtanding on ſlender foot-ſtalks without any order, ſometimes ſingle, and at others, two or three ariſe from the ſame joint. The flowers are produced in ſhort ſpikes from the ſide of the branches; they are of a whitiſh green colour, and the female flowers are ſucceeded by capſules, having three cells, each including a ſingle ſeed.

The eighth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby ſtalk about ſix or ſeven feet high, ſending out many ſide branches, which are covered with a ſmooth bark, of a yellowiſh white colour, garniſhed very cloſely with narrow ſtiff leaves near three inches long, and about one eighth of an inch broad, of a light green on their upper ſide, but their under ſide is the ſame colour as the bark; the midrib is furrowed on their upper ſide, and very prominent on the lower; the upper part of the branches divide into four or five ſmaller, which ariſe from the ſame joint, and are nearly equal in their length, and between theſe ariſe a long looſe ſpike of whitiſh green flowers. The whole plant hath an aromatic odour when rubbed. The ſeeds grow in roundiſh capſules having three cells, each including a ſingle ſeed.

The ninth ſort grows naturally in Jamaica, from whence it was ſent me by the late Dr. Houſtoun; this riſes with a ſhrubby ſtalk ſix or ſeven feet high, dividing upward into ſeveral branches, which are covered with a yellowiſh down, garniſhed with long heart-ſhaped leaves, ending in acute points; theſe are two inches and a half long, and one broad in their wideſt part, ſtanding on long foot-ſtalks, covered on both ſides with a woolly down of the ſame colour as the branches. The flowers are produced on long cloſe ſpikes at the end of the branches; the male flowers, which are ſituated on the upper part of the ſpikes, have white flowers of one leaf, divided into five parts almoſt to the bottom, and have five taper ſtamina, ſituated in the bottom. The female flowers on the lower part of the ſpikes, have large woolly empalements, and are ſucceeded by round capſules with three cells, each including a ſingle ſeed.

The tenth ſort riſes with a ſhrubby ſtalk near four feet high, dividing into many ſmaller branches, which have a ſilvery bark, and are garniſhed with ſmall heart-ſhaped leaves, about three quarters of an inch long, and half as broad at their baſe, ending in acute points; theſe are woolly on both ſides, but their under ſide is ſilvery, their upper ſide of a yellowiſh green. The flowers are produced in ſhort ſpikes at the end of the branches, which are ſmall, white, and have woolly empalements. The female flowers on the lower part of the ſpikes are ſucceeded by roundiſh capſules with three cells, each containing one ſeed.

All theſe plants except the firſt, are natives of warm countries, ſo will not thrive in England, unleſs they are tenderly treated. They are all propagated by ſeeds; thoſe which are annual perfect their ſeeds in

England; but the ſhrubby ſorts very rarely arrive to that perfection, ſo their ſeeds muſt be procured from the countries where they naturally grow. The ſeeds muſt be ſown on a hot-bed early in the ſpring, and when the plants are fit to remove, they ſhould be each tranſplanted into a ſmall pot, and plunged into a moderate hot-bed of tanners bark, where they ſhould be ſhaded from the ſun till they have taken freſh root; then they muſt have air admitted to them daily, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently refreſhed with water, particularly the ſecond, third, and fourth ſorts, which will often require water, but the others ſhould have it more ſparingly. After the plants are grown too tall to remain in the frames, they ſhould be removed, either into the ſtove, or a glaſs-caſe, where there is a hot-bed of tanners bark, into which the pots ſhould be plunged, and there the annual ſorts will flower and perfect their ſeeds; but the ſhrubby kinds muſt be removed into the bark-ſtove in the autumn, and during the winter ſeaſon they ſhould have but little water; and the ſtove ſhould be kept in a good temperature of heat, otherwiſe they will not live through the winter in England.

As theſe plants retain their leaves all the year, ſo they make a pretty variety in winter, when they are intermixed with other plants, whoſe leaves are of different forms and colours from theſe.

CROWN IMPERIAL. See PETILIUM.

CRUCIANELLA. Lin. Gen. Plant. 118. Rubeola. Tourn. Inſt. R. H. 130. tab. 50. Petty Madder.

The CHARACTERS are,

The flower hath a two-leaved empalement, which is rigid and compreſſed. It hath one petal, with a ſlender cylindrical tube which is longer than the empalement, and cut into four parts at the brim. It hath four ſtamina ſituated in the mouth of the tube, terminated by ſingle ſummits. It hath a compreſſed germen, ſituated at the bottom of the tube, ſupporting a ſlender bifid ſtyle, crowned by two obtuſe ſtigmas. The germen afterward become two twin capſules, each containing one oblong ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

The SPECIES are,

1. CRUCIANELLA (*Anguſtifolia*) erecta, foliis ſenis linearibus. Hort. Upſal. 27. *Upright Crucianella with ſix narrow leaves.* Rubeola anguſtiore folio. Tourn. Inſt. 130. *Petty Madder.*
2. CRUCIANELLA (*Latifolia*) procumbens, foliis quaternis lanceolatis, floribus ſpicatis. Hort. Upſal. 27. *Trailing Crucianella with four ſpear-ſhaped leaves and ſpiked flowers.* Rubeola latiore folio. Tourn. Inſt. 130.
3. CRUCIANELLA (*Maritima*) procumbens ſuffruticoſa foliis quaternis, floribus oppoſitis quinquefidis. Lin. Sp. Plant. 158. *Crucianella with trailing ſhrubby ſtalks, four leaves at each joint, and flowers growing in whorls.* Rubeola maritima. C. B. P.
4. CRUCIANELLA (*Hiſpida*) caule hiſpido, foliis lanceolatis hirſutis oppoſitis, floribus umbellatis terminalibus. *Crucianella with a ſtinging ſtalk, ſpear-ſhaped hairy leaves placed oppoſite, and flowers growing in umbels at the ends of the branches.* Rubeola Americana hirſuta, parietariæ foliis, floribus umbellatis purpureis. Houſt. MSS.
5. CRUCIANELLA (*Americana*) foliis lineari-lanceolatis hirſutis oppoſitis, caule erecto villoſo, floribus ſolitariis alaribus. *Crucianella with narrow, ſpear-ſhaped, hairy leaves placed oppoſite, an erect hairy ſtalk, and ſingle flowers proceeding from the ſides of the branches.*

The firſt ſort grows naturally in the ſouth of France and Italy; this is an annual plant, which riſes with ſeveral upright ſtalks a foot high, having ſix or ſeven very narrow linear leaves placed in whorls, at each joint. The flowers grow in cloſe ſpikes at the top and from the ſide of the branches; theſe are ſmall, white, and not longer than the empalement, ſo make no great appearance. It flowers in June and July, and the ſeeds ripen in autumn.

The ſecond ſort grows in the iſlands of the Archipelago, and alſo about Montpelier; this is alſo an annual plant, ſending out ſeveral branching ſtalks from the root, which lie proſtrate, and are garniſhed with four ſpear-ſhaped leaves at each joint. The flowers are produced in long ſpikes at the extremity of the branches; theſe are very ſmall, ſo make no great appearance. It flowers about the ſame time as the former.

The third ſort is like the ſecond in the appearance of leaves and ſtalks, but the flowers grow on the ſide of the ſtalks, almoſt in whorls, and make little appearance. This grows naturally on the borders of the ſea, in the ſouth of France and Italy.

Theſe three ſorts are preſerved in ſome gardens for the ſake of variety; if the ſeeds are ſown on a bed of light earth early in the ſpring, where they are deſigned to remain, they will require no other culture, but to thin them where they are too cloſe, and keep them clean from weeds; or if the ſeeds are permitted to ſcatter, the plants will come up in the ſpring, and require no other treatment; but the third ſort will not ripen its ſeeds here, when the autumn is not favourable.

The fourth ſort hath four-cornered, rough, prickly ſtalks, which bend downward, and are garniſhed with ſpear-ſhaped leaves, which are hairy and ſtand oppoſite; the flowers are produced in ſmall cluſters at the end of the branches, which are blue, and cut into four parts at the top; after theſe decay, they are ſucceeded by twin capſules joined, in each of theſe is one oblong ſeed.

The fifth ſort riſes with a ſhrubby branching ſtalk near three feet high, which is garniſhed with narrow ſpear-ſhaped leaves, covered with ſtinging hairs. The flowers are produced from the wings of the leaves, on each ſide the ſtalk ſingly; theſe are of a pale blue colour, and are ſucceeded by twin fruit like the former.

Both theſe ſorts grow naturally at La Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun; and the plants grew in the Chelſea garden very well during the ſummer ſeaſon, but periſhed in the autumn before their ſeeds were ripe.

CRUCIATA. See VALANTIA.

CRUPINA BELGARUM. See SERRATULA.

CUCUBALUS. Lin. Gen. Plant. 502. Tourn. Inſt. R. H. 339. tab. 176. Berry-bearing Chickweed.

The CHARACTERS are,

The flower hath an oblong permanent empalement of one leaf, cut into five ſegments. It hath five petals, with tails as long as the empalement, but ſpread open at the top. It hath ten ſtamina, five of which are alternately inſerted in the tail of the petals; theſe are terminated by oblong ſummits. In the center is ſituated the oblong germen, ſupporting three ſtyles which are longer than the ſtamina, crowned by oblong hairy ſtigmas. The empalement afterward becomes a pointed cloſe capſule with three cells, opening at the top in five parts, and filled with many roundiſh ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's tenth claſs, intitled Decandria Trigynia, the flowers having ten ſtamina and three ſtyles.

The SPECIES are,

1. CUCUBALUS (*Bacciferus*) calycibus campanulatis, petalis diſtantibus, pericarpiis coloratis, ramis divaricatis. Lin. Sp. Plant. 414. *Cucubalus with a bell-ſhaped empalement, petals ſtanding aſunder, a coloured cover to the fruit, and divaricated branches.* Cucubalus Plinii. Lugd. 1429.
2. CUCUBALUS (*Latifolius*) caulibus erectis glabris, calycibus ſubgloboſis, ſtaminibus corollâ longioribus. *Cucubalus with ſmooth erect ſtalks, globular empalements, and ſtamina longer than the petals.* Lychnis ſylveſtris quæ behen album vulgò. C. B. P. 205. *Commonly called Spatling Poppy.*
3. CUCUBALUS (*Anguſtifolius*) calycibus ſubgloboſis, caule ramoſo patulo, foliis linearibus acutis. *Cucubalus with globular empalements, a branching ſpreading ſtalk, and*

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and narrow-pointed leaves. Lychnis ſylveſtris quæ behen album vulgò, foliis anguſtioribus & acutioribus. C. B. P. 250. *Spatling Poppy, with narrower pointed leaves.*

4. Cucubalus (*Behen*) calycibus ſubgloboſis glabris reticulato-venoſis, capſulis trilocularibus corollis ſubnudis. Flor. Suec. 360. *Cucubalus with ſmooth globular empalements which have netted veins, capſules having three cells, and naked petals.* Lychnis Suecica behen album folio, habitu, calyce ampliſſimo: gumſepungar ſive ſcrotum arietis dicta. Boerh. Ind. alt. 212. *Called Gumſepungar in Sweden.*

5. Cucubalus (*Fabarius*) foliis obovatis carnoſis. Prod. Leyd. 448. *Cucubalus with oval fleſhy leaves.* Lychnis maritima ſaxatilis, folio anacampſerotis. Tourn. Cor. 24.

6. Cucubalus (*Dubrenſis*) floribus lateralibus decumbentibus, caule indiviſo, foliis baſi reflexis. Lin. Sp. Plant. 414. *Cucubalus with declining flowers on the ſides of the ſtalk, which is undivided, and leaves reflexed at their baſe.* Lychnis major noctiflora Dubrenſis perennis. Raii Hiſt. 995. *Greater perennial night-flowering Lychnis of Dover.*

7. Cucubalus (*Stellatus*) foliis quaternis. Hort. Upſal. 110. *Four-leaved Cucubalus.* Lychnis carophyllæus Virginianus, gentianæ foliis glabris quatuor ex ſingulis geniculis caulem amplexantibus, flore amplo fimbriato. Raii Hiſt. 1895.

8. Cucubalus (*Noctiflora*) calycibus ſtriatis acutis petalis bipartitis, caule paniculato, foliis linearibus. *Cucubalus with ſtriated acute empalements, petals divided in two parts, a paniculated ſtalk, and narrow leaves.* Lychnis noctiflora anguſtifolia odorato. Tourn. Inſt. R. H. 335. *Narrow-leaved, ſweet-ſcented, night-flowering Lychnis.*

9. Cucubalus (*Otites*) floribus dioicis, petalis linearibus indiviſis. Hort. Cliff. 272. *Cucubalus with male and female flowers on different plants, and linear undivided petals.* Lychnis viſcoſa, flore muſcoſo. C. B. P. 206.

10. Cucubalus (*Acaulis*) acaulis. Flor. Lapp. 184. *Cucubalus without ſtalks.* Lychnis Alpina pumila, folio gramineo, ſive muſcus Alpinus Lychnidis flore. C. B. P. 206.

11. Cucubalus (*Catholicus*) petalis bipartitis, floribus paniculatis, ſtaminibus longis, foliis lanceolato ovatis. Hort. Upſal. 111. *Cucubalus with bifid petals, flowers growing in panicles, long ſtamina, and ſpear-ſhaped acute leaves.* Lychnis altiſſima, ocymaſtri facie, flore muſcoſo. Triumfet.

12. Cucubalus (*Paniculatus*) foliis radicalibus ovatis acutis, caulinis lanceolatis oppoſitis, floribus paniculatis erectis. *Cucubalus with lower leaves oval and pointed, thoſe on the ſtalks ſpear-ſhaped, oppoſite, and flowers growing in panicles which are erect.*

13. Cucubalus (*Italicus*) petalis bipartitis, caule paniculato, foliis radicalibus ovato-lanceolatis caulinis linearibus. *Cucubalus with petals divided in two parts, a paniculated ſtalk, whoſe lower leaves are oval and ſpear-ſhaped, and thoſe on the ſtalks very narrow.*

The firſt ſort grows naturally in France, Germany, and Italy, in ſhady places, and is ſeldom kept in gardens, unleſs for the ſake of variety; it ſends out many climbing ſtalks, which grow four or five feet high where they meet with ſupport, otherwiſe they trail on the ground; theſe ſtalks ſend out ſide branches oppoſite, at each joint; the leaves are like thoſe of Chickweed, and are placed oppoſite. The flowers come out ſingle at the end of the branches, which have large inflated empalements; they conſiſt of five petals, which are white, cut at the brim into ſeveral narrow ſegments, and are placed at a diſtance from each other; they are ſucceeded by oval berries, which, when ripe, are black and full of juice, incloſing ſeveral flat ſhining ſeeds. It flowers in June, and the ſeeds ripen in autumn. This hath a perennial creeping root, whereby it is apt to multiply too faſt in gardens. It delights in ſhade, and will thrive in almoſt any ſoil.

The ſecond ſort grows naturally in moſt parts of England, where it is generally called Spatling Poppy. This ſtands in the catalogue of medicinal plants, under the title of Behen album; the roots of it are ſometimes uſed, and are accounted cordial, cephalic, and alexipharmic. It hath a perennial root, which ſtrikes deep into the ground, ſo that they are not eaſily deſtroyed by the plough, therefore it is frequently ſeen growing in bunches among corn. It is a rambling weed, ſo is ſeldom cultivated.

The third ſort grows naturally on the Alps; this differs from the former, in having much longer and narrower leaves, and the ſtalks being more divided and ſpreading, nor do the roots creep under ground like that. Theſe differences are conſtant, for I have ſown it above thirty years, and never found it vary.

The fourth ſort grows naturally in Sweden, and ſome other northern countries, where it paſſes for the common ſort; but although it is there ſo, yet is very different from the ſecond here mentioned, which is the ſort that grows common in moſt other parts of Europe. The ſtalks of this are much larger, the leaves longer and more pointed; the empalement of the flower is curiouſly veined like net-work, of a purpliſh colour, whereas that of our common ſort is plain. Theſe differences are laſting, when the plants are cultivated in a garden.

The fifth ſort was diſcovered by Tournefort in the Levant, who ſent the ſeeds to the royal garden at Paris. This puts out many oval, thick, ſucculent leaves near the ground, out of the middle of which, ariſes an upright ſtalk about fifteen inches high, the lower part of which is garniſhed with leaves of the ſame form and conſiſtence as thoſe at bottom, but are ſmaller; theſe are placed oppoſite; the upper part of the ſtalk divides into two ſmaller, on which ſtand a few ſmall herbaceous flowers at each joint. It flowers in June, and ſometimes ripens ſeeds in autumn. The plant is biennial, generally periſhing when it has produced ſeeds; but unleſs it is ſown upon a very dry rubbiſh, and in a warm ſituation, the plants will not live through the winter in England; for when they are in good ground, they grow large, and are ſo replete with moiſture, as to be affected by the firſt froſt in the autumn; but where they have grown upon an old wall, I have known them eſcape, when all thoſe were killed which grew in the ground.

The ſixth ſort grows naturally upon the cliffs near Dover. This hath a perennial root, from which ariſes a ſingle ſtalk about a foot and a half high, garniſhed with long narrow leaves placed oppoſite; the flowers are produced from the ſide of the ſtalks, each foot-ſtalk ſuſtaining three flowers; the foot-ſtalks come out by pairs oppoſite, the empalement of the flower is long and ſtriped, the flowers are of a pale red. Theſe appear in June, and the ſeeds ripen in autumn.

The ſeventh ſort grows naturally in Virginia, and ſeveral other parts of North America. This hath a perennial root, from which ariſe two or three ſlender upright ſtalks about a foot high, their lower part being garniſhed with four leaves at each joint, placed in form of a croſs; theſe are ſmooth, of a deep green, about an inch and a half long, and half an inch broad near their baſe, terminating in acute points; the joints of the upper part of the ſtalk are garniſhed with white fringed flowers, ſtanding ſingle upon pretty long foot-ſtalks, which come out by pairs oppoſite. The flowers appear in June, and in warm ſeaſons the ſeeds will ripen in England.

The eighth ſort grows naturally in Spain and Italy. This is a perennial plant, which riſes with an upright branching ſtalk a foot and a half high, garniſhed with very narrow leaves placed oppoſite; the upper part of the ſtalk is very branching; ſome of theſe branches are long, and others ſhort; the flowers ſtand upon long naked foot-ſtalks, each ſupporting three or four flowers, which have long tubes, with ſtriped empalements; the petals are large, and deeply divided at the top; they are of a pale bluiſh colour. Theſe flowers are cloſed all day, but when the ſun leaves them, they expand, and then they have a very agreeable ſcent. This ſort may be propagated by ſeeds,

ſeeds, which ſhould be ſown in the ſpring upon a bed of light earth; and when the plants are fit to remove, they ſhould be planted in a nurſery-bed, at about four inches diſtance, where they may remain till autumn, when they may be planted in the borders of the flower-garden, where they are deſigned to remain. The following ſummer theſe will produce their flowers, and ripen their ſeeds in the autumn; but the roots will continue ſeveral years, provided they are not planted in rich ground, where they are very ſubject to rot in winter.

The ninth ſort grows naturally in Auſtria, Sileſia, and Italy, as alſo in ſome parts of England. This is male and female in different plants; it hath a thick, fleſhy, biennial root, which ſtrikes deep in the ground, ſending out many oblong leaves, which are broad at their extremity, but contract narrower to their baſe; from between theſe ariſe the ſtalks, which in the male plants often grow four or five feet high, but thoſe of the female are ſeldom above three feet high; the ſtalks are garniſhed with narrow leaves, placed oppoſite at each joint, where there exſudes a viſcous clammy juice, which ſticks to the fingers when handled, and the ſmall inſects which ſettle upon thoſe parts of the ſtalks, are thereby faſtened ſo as not to get looſe again. The flowers of the male plants are produced in looſe ſpikes from the lower joints of the ſtalk, but on the upper part, they ſtand on ſingle foot-ſtalks in cluſters quite round the ſtalks; theſe are ſmall, of a greeniſh colour, and have each ten ſtamina. The female plants have three or four flowers growing upon each foot-ſtalk, which ariſe from the ſide of the ſtalk. Theſe are ſucceeded by oval ſeed-veſſels, containing many ſmall ſeeds; they flower in June, and the ſeeds ripen in autumn. This is propagated by ſeeds, which ſhould be ſown where the plants are deſigned to remain; for as they ſend out long tap-roots, they do not bear tranſplanting, unleſs it is performed while the plants are young. The plants are very hardy, ſo will [illegible]ive in almoſt any ſoil or ſituation, but agree beſt with a dry ſoil. It is neceſſary to have ſome male plants among the female, to have perfect ſeeds.

The tenth ſort grows naturally on the Alps, and alſo upon the hills in the north of England and Wales. This is a very low plant, with ſmall leaves, which ſpread on the ground, and have the appearance of moſs. The flowers are ſmall, erect, and rarely riſe more than half an inch high; they are of a dirty white colour, and appear in May. This is a perennial plant, which will not thrive but in a moiſt ſoil and a ſhady ſituation.

The eleventh ſort grows naturally in Italy and Sicily. This is a perennial plant, with large thick roots, ſending out many long ſpear-ſhaped leaves near the ground; between theſe ariſe round viſcous ſtalks, which grow three feet high, garniſhed at each joint by two long narrow leaves, ending in acute points. The ſtalks branch out into many diviſions, on the upper parts of which the foot-ſtalks of the flowers ariſe from each joint by pairs oppoſite; each of theſe ſuſtain three or four flowers of an herbaceous colour, whoſe petals are divided into two parts; the flowers appear in June, and the ſeeds ripen in the autumn. This is propagated by ſeeds in the ſame manner as the ninth.

The twelfth ſort grows naturally in Spain and Italy, from whence I received the ſeeds. This is a biennial plant, which decays ſoon after it hath perfected ſeeds: this hath many oval pointed leaves near the root, ſtanding upon long foot-ſtalks; between theſe ariſe an upright ſtalk, ſending out two ſide branches at each joint, placed oppoſite; under each of theſe is ſituated one ſpear-ſhaped leaf, ending in an acute point; theſe ſide branches, and alſo the upright ſtalks, are terminated by whitiſh flowers, formed into a panicle, and ſtanding erect; theſe appear in June, and are ſucceeded by ſeeds which ripen in autumn. This is propagated by ſeeds, which may be ſown on an open border where the plants are deſigned to remain, and require no other culture but to keep them clear from weeds.

The thirteenth ſort grows naturally in Italy, from whence I received the ſeeds; this is a perennial plant, which hath many oval ſpear-ſhaped leaves near the root; the ſtalks riſe about two feet high; they are viſcous, and from each joint comes out two ſide branches, under which are ſituated two very narrow leaves; the ſtalks ſpread out and form a ſort of panicle, and are terminated by cluſters of greeniſh flowers, whoſe petals are divided into two parts. This flowers in June, and the ſeeds ripen in autumn. It is propagated in the ſame manner as the ninth ſort, and requires the ſame treatment.

CUCULLATE PLANTS are ſo called, of cuculla, *Lat.* a hood or cowl, ſuch as monks wear, becauſe their flowers reſemble it.

CUCUMIS. Lin. Gen. Plant. 969. Tourn. Inſt. R. H. 104. tab. 28. Cucumber; in French, *Concombre.*

The CHARACTERS are,

It hath male and female flowers placed at diſtances on the ſame plant; theſe have a bell-ſhaped empalement of one leaf, whoſe border is terminated by five briſtles. The flowers are bell-ſhaped, have one petal which adheres to the empalement, and is cut into five oval rough ſegments. The male flowers have three ſhort ſtamina, which are inſerted to the empalement, two of which have bifid tops. Theſe are terminated by very narrow ſummits or lines, which run upward and downward, and adhere to the outſide. The female flowers have no ſtamina, but have three ſmall pointed filaments without ſummits. The germen, which is oblong, is ſituated under the flower, ſupporting a ſhort cylindrical ſtyle, crowned by three thick convex ſtigmas, which are bipartite. The germen afterward becomes an oblong fleſhy fruit with three cells, including many oval, flat, pointed ſeeds.

This genus of plants is ranged in the tenth ſection of Linnæus's twenty-firſt claſs, intitled Moncœcia Syngeneſia. The plants of this claſs have male and female flowers on different parts of the ſame plant, and thoſe of this ſection have their ſtamina joined. To this genus he has joined the Melon, Water Melon, and Bitter Apple; but however theſe may agree in their characters, ſo as to be joined together in a ſyſtem of botany, it will not be proper in a book of gardening to be followed.

The SPECIES are,

1. CUCUMIS (*Sativus*) foliorum angulis rectis, pomis oblongis ſcabris. Hort. Cliff. 451. *Cucumber with leaves having right angles, and an oblong rough fruit.* Cucumis ſativus vulgaris. C. B. P. 310. *The common Garden Cucumber.*
2. CUCUMIS (*Flexuoſus*) foliorum angulis rectis, pomis longiſſimis glabris. *Cucumber with leaves having right angles, and a very long ſmooth fruit.* Cucumis flexuoſus. C. B. P. 310. *The long Turkey Cucumber.*
3. CUCUMIS (*Chata*) hirſutis foliorum angulis integris dentatis, pomis fuſciformibus hirtis utrinque attenuatis. Haſſelq. It. 491. *Hairy Cucumber with angular indented leaves, and narrow hairy fruit.* Cucumis Ægyptius rotundifolius. C. B. P. 310.

The firſt ſort is the Cucumber which is generally cultivated for the table, and is ſo well known as to need no deſcription. The ſecond ſort is the long Turkey Cucumber, which is alſo pretty well known in England. The ſtalks and leaves of this ſort are much larger than thoſe of the common ſort. The fruit is generally twice the length, and hath a ſmooth rind: this is undoubtedly different from the common ſort, for I have cultivated it above forty years, and have not found it alter. There are green and white fruit of this ſort, which differ but little except in their colour, ſo I have not diſtinguiſhed them as diſtinct ſpecies, though I have alſo found them keep their difference from ſeeds. The white is leſs watery than the green, ſo is generally better eſteemed. I have alſo received ſeeds from China of another ſort, with a much longer fruit than the Turkey, but I have found this will degenerate in time, and become more like the common ſort.

In Holland they cultivate a long white prickly Cucumber only, which is very different from the Turkey Cucumber, being near as rough as the common ſort; but this is not ſo hardy as our common ſort, ſo is ſeldom cultivated in England; but the fruit is not ſo watery or full of ſeeds as the common, therefore is preferable to it for the table.

The third ſort here enumerated is rarely cultivated, but in botanic gardens for the ſake of variety, the fruit being very indifferent, and the plants being tender, require a good heat to bring them to perfection in England; theſe plants ramble very far, ſo muſt have much room, and they are not very fruitful.

The common ſort is cultivated in three different ſeaſons, the firſt of which is on hot-beds under garden-frames, for early fruit; the ſecond is under bell or hand-glaſſes, for the middle crop; and the third is in the common ground, for a late crop, or to pickle.

I ſhall begin with giving directions for raiſing Cucumbers early, which is what moſt gentlemens gardeners have an emulation to excel each other in; and ſome have been at the pains and expence to have ripe fruit in every month of the year, which is rather a curioſity than any real advantage; for Cucumbers that are produced before April, cannot be ſo wholeſome as thoſe that are later; for before the ſun hath ſtrength enough to warm the beds through the glaſſes in the day-time, all the heat muſt proceed from the fermentation of the dung, which muſt conſequently occaſion a very conſiderable ſteam, as alſo a great quantity of air will be thereby generated, which, being pent up in the hot-bed, ſoon becomes rancid; and the ſteam of the bed being by the cold of the night condenſed into large drops of water, theſe, being abſorbed or inſpired by the plants, muſt certainly make the fruit crude and unwholeſome, eſpecially when the nights are very long. This, together with the great expence and trouble of procuring them earlier, having in ſome meaſure got the better of peoples ambition, ſo this is leſs practiſed than it hath been ſome years ſince; but as there are many perſons who yet value themſelves on their ſkill in raiſing early Cucumbers, we may probably be cenſured, as being deficient in what they call an eſſential part of gardening, ſhould we omit the method practiſed for raiſing theſe fruit early in the year. Therefore ſhall proceed to give ſuch directions, as if carefully attended to, will not fail of ſucceſs.

Thoſe perſons who are very deſirous to be early with their Cucumbers, generally ſow their ſeeds before Chriſtmas, but the generality of gardeners commonly put their ſeeds into the hot-bed about Chriſtmas. Where perſons have the conveniency of a ſtove for raiſing theſe plants, it is attended with leſs trouble than a common hot-bed, and is a much ſurer method, becauſe the plants will have a much greater ſhare of air, which will alſo be leſs mixed with damp or rancid vapours; for by the heat of the fires theſe will be diſſipated, and the temperature of the air is kept more equal than can be done with all poſſible care in a hot-bed, at a ſeaſon when we enjoy but little ſun; therefore where there is this convenience, the ſeeds ſhould be ſown in ſmall pots, filled with light dry earth, and plunged into the tan-bed, in the warmeſt part of the ſtove. The pots with earth ſhould be plunged three or four days before the ſeeds are ſown, that the earth may be properly warmed to receive them; the ſeeds ſhould be at leaſt three or four years old, but if it is more, provided it will grow, it will be the better. If the ſeeds are good, the plants will be begin to appear in about a week or nine days, at which time there muſt be as many halfpenny pots filled with dry light earth, as there are plants deſigned for planting (always allowing for loſs; ſo that where twenty-four plants are wanting, there ſhould be thirty raiſed); theſe pots ſhould be plunged into the bark-bed, that the earth may be warmed to receive the plants, which ſhould be pricked into theſe pots as ſoon as the two firſt leaves are raiſed above ground; into each of theſe pots may be two plants pricked, but

when they have taken root, and are ſafe, the worſt ſhould be drawn out, being careful not to diſturb the roots of thoſe which are left. In the management of theſe plants, there muſt be great care taken not to give them too much water; and it will be very proper to put the water into the ſtove ſome hours before it is uſed, that the cold may be taken off; but there muſt be caution uſed not to make it too warm, for that will deſtroy the plants; they muſt alſo be guarded from the moiſture which frequently drops from the glaſſes of the ſtove, which is very deſtructive to theſe plants while young. As theſe plants muſt not be kept too long in the ſtove leſt they become troubleſome to the other plants, there ſhould be a proper quantity of new dung prepared for making a hot-bed to receive them; this muſt be in proportion to the quantity of holes or plants intended: for a middling family ſix or nine lights of Cucumbers will be ſufficient, and for a large one double the quantity; but the beds where they are deſigned to remain need not be made ſo ſoon, but rather a ſmall bed of one light, in which the plants may be trained up, till they have acquired a greater ſhare of ſtrength; and for this bed one good cart load of dung will be ſufficient. This ſhould be new, and not too full of ſtraw, nor ſhould it want a proper portion; it ſhould be well mixed together and thrown in a heap, mixing ſome ſea-coal aſhes with it; after it hath lain in a heap a few days, and has fermented, it ſhould be carefully turned over and mixed, laying it up again in a heap; and if there is a great ſhare of ſtraw in it, there may be a neceſſity for turning it over a third time, after having laid a few days: this will rot the ſtraw and mix it thoroughly with the dung, ſo there will be leſs danger of its burning afterward when the bed is made, which ſhould be done when the dung is in proper order. The place where the hot-bed is made ſhould be well ſheltered by Reed hedges, and the ground ſhould be dry; then there ſhould be a trench made in the ground, of a proper length and breadth, and a foot deep at leaſt; into which the dung ſhould be well ſolded and carefully ſtirred up and mixed, ſo that no part of it ſhould be left unſeparated, for where there is not this care taken, the bed will ſettle unequally; there ſhould alſo be great care taken to beat the dung down cloſe in every part of the bed alike. When the bed is made, the frame and glaſſes ſhould be put upon it to keep out the rain, but there ſhould be no earth laid upon the dung till two or three days after, that the ſteam of the dung may have time to evaporate. If there ſhould be any danger of the bed burning, it will be proper to lay ſome ſhort old dung, or ſome neats dung, over the top of the hot dung about two inches thick, which will keep down the heat, and prevent the earth from being burnt; after this there ſhould be a ſufficient number of three farthing pots placed upon the bed, filled with light dry earth, and all the interſtices between them filled up with any common earth. In two or three days the earth in theſe pots will be of a proper temperature of warmth to receive the plants, which ſhould be then turned out of the halfpenny pots, preſerving the ball of earth to their roots, and planted into the three farthing pots, filling up the pots with good earth; then a little water ſhould be given them to ſettle the earth about their roots, being careful not to give them too much wet; and as theſe will have ſuch large balls of earth to their roots, they will not feel their movement, therefore will not require ſhading from the ſun; but the glaſſes ſhould be raiſed up a little on the contrary ſide from the wind, to let the ſteam of the bed paſs off; and they ſhould alſo be frequently turned in the day-time, that the wet occaſioned by the ſteam of the dung may be dried, otherwiſe the moiſture will fall on the plants, which will be very injurious to them. If the bed ſhould heat too violently, ſo as to endanger ſcalding the roots of the plants, the pots may be raiſed ſo as to allow of a little hollow at their bottoms, which will effectually prevent injury thereby; and when the heat declines, the pots may be turned down again.

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again. The glaſſes of the hot-bed ſhould be well covered with mats every night, to keep the bed in a proper temperature of heat, and great care muſt be taken to admit freſh air every day to the plants; but this ſhould be done with caution, ſo as to guard againſt the cold winds which uſually blow at that ſeaſon; ſo that a mat or canvaſs ſhould be hung over the opening made by raiſing of the glaſſes, to prevent the cold air from ruſhing in too violently, and the glaſſes ſhould always be raiſed on that ſide which is contrary to the wind. The plants will alſo require to be frequently watered, but it muſt be cautiouſly given them at this ſeaſon, and the water ſhould not be cold, but either placed in a ſtove, or put into a warm heap of dung, to take off the chill from it before it is uſed.

If the weather ſhould prove bad, and the heat of the bed decline, there ſhould be ſome hot dung laid round the ſides of the bed to renew the heat, which muſt not be ſuffered to fail; for as the plants have been tenderly brought up, they muſt not ſuffer from cold, for that will ſoon deſtroy them.

In this bed the plants may remain about three weeks or a month, in which time, if they have been properly managed, they will have obtained ſufficient ſtrength to put out for good; therefore a proper quantity of dung ſhould have been mixed and turned ready for making of the beds. The uſual quantity allowed for making of the beds at this ſeaſon, is one good cart load to each light: this ſhould be well mixed and turned over in the manner before directed; then a trench ſhould be dug in the ground the length and width of the intended bed, into which the dung ſhould be wheeled, and properly worked according to the above directions, and ſome old dung or neats dung ſpread over the top. The frames and glaſſes ſhould then be put on the bed, which ſhould be raiſed ever[illegible]y to let the ſteam of the dung paſs off, and in about three days the bed will be in a proper temperature of heat to receive the plants; at which time the dung ſhould be covered over with dry earth about four inches thick, and in the middle of the bed it ſhould be three or four inches thicker; this ſhould be laid upon the dung at leaſt twenty-four hours before the plants are removed into the bed, that the earth may be properly warmed; then the plants ſhould be carefully ſhaken out of the pots, preſerving all the earth to their roots, and placed on the top of the earth in the middle of the bed. Two, or at moſt, three of theſe plants will be ſufficient for each light, and theſe ſhould be placed at about ſeven or eight inches aſunder, not all the roots together, as is too often practiſed. When the plants are thus ſituated in the bed, the earth which was laid ſo much thicker in the middle of the bed, ſhould be drawn up round the ball which remained to the roots of the plants, into which their roots will ſoon ſtrike; there ſhould always be a magazine of good earth laid under cover to keep it dry, for the earthing of theſe beds; for if it is taken up wet, it will chill the beds, and alſo occaſion great damps therein, therefore it is quite neceſſary to have a ſufficient quan[illegible]ty of earth prepared long before it is uſed. When the plants are thus ſettled, they muſt have proper air and water, according as they may require, being careful not to admit too much cold air, or give too much water; the glaſſes ſhould alſo be well covered with mats every night, to keep up the warmth of the bed, and ſome freſh earth ſhould be put into the bed at different times, which ſhould be laid at ſome diſtance from the roots of the plants till it is warmed, and then ſhould be drawn up round the heap of the earth in which the plants grow, to increaſe the depth; the ſhould be raiſed to the full height of the former ball, that the roots of the plants may more eaſily ſtrike into it: by this method of ſupplying the earth, the whole ſurface of the beds will be covered nine or ten inches with earth, which will be of great ſervice to the roots of the plants; for where the earth is very ſhallow, the leaves of the plants will always hang in the heat of the day, unleſs they are ſhaded, and the plants will require more water to keep them alive, than is proper to give them; therefore it will be found much the better way to allow a proper depth of earth to the beds: but the reaſon of not laying the quantity of earth on the bed when it is firſt made, is, that the dung ſhould not be too much chilled by it, or that the earth may not be burned, which might be endangered thereby, were the whole thickneſs to be laid on at once; beſides, by thus gradually applying the earth, it will be freſh, and much better for the roots of the plants, than that which has been long upon the bed, and has been too much moiſtened by the ſteam ariſing from the dung.

If the heat of the bed ſhould decline, there ſhould be ſome hot dung laid round the ſide of the bed to renew the heat; for if that ſhould fail at the time when the fruit appears, they will fall off and periſh, therefore this muſt be carefully regarded; and when the plants have put out ſide branches (which the gardeners call runners) they ſhould be properly placed, and pegged down with ſmall forked ſticks to prevent their riſing up to the glaſſes, and alſo from croſſing and entangling with each other; ſo that when they are properly directed at firſt, there will be no neceſſity of twiſting and tumbling the plants afterward, which is always hurtful to them.

When the earth of the bed is laid the full thickneſs, it will be neceſſary to raiſe the frames, otherwiſe the glaſſes will be too cloſe to the plants; but when this is done, there muſt be care taken to ſtop the earth very cloſe round the ſide of the frame, to prevent the cold air from entering under them. The watering the plants, and admitting freſh air to them, muſt be diligently attended to, otherwiſe the plants will be ſoon deſtroyed; for a little neglect either of admitting air, or letting in too much, or by over watering, or ſtarving the plants, will very ſoon deſtroy them paſt recovery.

When the fruit appears upon the plants, there will alſo appear many male flowers on different parts of the plant; theſe may at firſt ſight be diſtinguiſhed, for the female flowers have the young fruit ſituated under the flowers, but the male have none; but theſe have three ſtamina in their center with their ſummits, which are loaded with a golden powder. This is deſigned to impregnate the female flowers, and when the plants are fully expoſed to the open air, the ſoft breezes of wind convey this farina or male powder from the male to the female flowers; but in the frames where the air is frequently too much excluded at this ſeaſon, the fruit often drops off for want of it; and I have often obſerved, that bees that have crept into the frames when the glaſſes have been raiſed to admit the air, have ſupplied the want of thoſe gentle breezes of wind, by carrying the farina of the male flowers on their hind legs into the female flowers, where a ſufficient quantity of it has been left to impregnate them. For as the bees make their wax of the farina or male powder of flowers, they ſearch all the flowers indifferently to find it; and I have obſerved them come out of ſome flowers with their hind legs loaded with it, and going immediately into other flowers which have none, they have ſcattered a ſufficient quantity of this farina about the ſtyle of the female flowers, to impregnate and render them prolific. Theſe inſects have taught the gardeners a method to ſupply the want of free air, which is ſo neceſſary for the performance of this in the natural way. This is done by carefully gathering the male flowers, at the time when this farina is fully formed, and carrying them to the female flowers, turning them down over them, and with the nail of one finger, gently ſtriking the outſide of the male, ſo as to cauſe the powder on the ſummits to ſcatter into the female flowers, and this is found to be ſufficient to impregnate them; ſo that by practiſing this method, the gardeners have now arrived at a much greater certainty than formerly, to procure an early crop of Cucumbers and Melons; and by this method the floriſts have arrived to greater certainty of procuring new varieties of flowers from

from ſeeds, which is done by the mixing of the farina of different flowers into each other.

When the fruit of the Cucumbers are thus fairly ſet, if the bed is of a proper temperature of warmth, they will ſoon ſwell, and become fit for uſe; ſo all that is neceſſary to be obſerved, is to water the plants properly, which ſhould be done by ſprinkling the water all over the bed, for the roots of the plants will extend themſelves to the ſide of the bed; therefore thoſe who are inclined to continue theſe plants as long as poſſible in vigour, ſhould add a ſufficient thickneſs of dung and earth all round the ſides of the beds, ſo as to enlarge them to near double their firſt width; this will ſupply nouriſhment to the roots of the plants, whereby they may be continued fruitful great part of the ſummer; whereas, when this is not practiſed, the roots of the plants, when they have reached the ſide of the beds, are dried by the wind and ſun, ſo that the plants languiſh and decay long before their time.

Thoſe gardeners who are fond of producing early Cucumbers, generally leave two or three of their early fruit, which are ſituated upon the main ſtem of the plant near the root, for ſeed; which, when fully ripe, they carefully ſave to a proper age for ſowing, and by this method they find a great improvement is made of the ſeed; and this they always uſe for their early crops only, for the ſucceeding crops do not deſerve ſo much care and attention.

I have here only mentioned the method of raiſing the young Cucumber plants in ſtoves; for as theſe conveniencies are now pretty generally made in the curious kitchen-gardens in moſt parts of England, this method may be more univerſally practiſed; but in ſuch gardens where there are no ſtoves, the ſeeds ſhould be ſown upon a well prepared hot-bed: and here it will be the beſt way to ſow the ſeeds in ſmall halfpenny pots, becauſe theſe may be eaſily removed from one bed to another, if the heat ſhould decline; or, on the contrary, if the heat ſhould be too great, the pots may be raiſed up, which will prevent the ſeed or the young plants from being injured thereby.

When the plants are come up as was before directed, there ſhould be a freſh hot-bed prepared, with a ſufficient number of halfpenny pots plunged therein ready to receive the plants, which muſt be planted into them in the ſame manner as was before directed, and the after-management of the plants muſt be nearly the ſame; but as the ſteam of the hot-bed frequently occaſions great damps, there muſt be great care to turn and wipe the glaſſes frequently, to prevent the condenſed moiſture falling on the plants, which is very deſtructive to them. There muſt alſo be great attention to the admitting freſh air at all proper times, as alſo to be careful in keeping the bed to a proper temperature of heat; for as there is a want of fire to warm the air, that muſt be ſupplied by the heat of dung, afterward theſe plants muſt be ridged out in the ſame manner as before directed.

If the bed is of a good temper for heat, your plants will take root in leſs than twenty-four hours; after which time you muſt be careful to let in a little air at ſuch times when the weather will permit, as alſo to turn the glaſſes upſide down every day to dry; for the ſteam of the bed condenſing on the glaſſes, will fall down upon the plants, and be very injurious to them; therefore whenever the weather is ſo bad as not to permit the glaſſes to lie turned long, you ſhould at leaſt turn them once or twice a day, and wipe off the moiſture with a woollen cloth; but you muſt alſo be very careful how you let in too much cold air, which is equally deſtructive to the tender plants; therefore, to avoid this, it is a very good method to faſten before the upper ſide of the frame, where the air is ſuffered to enter the bed, a piece of coarſe cloth or mat, ſo that the air which enters may paſs through that, which will render it leſs injurious to your plants.

You muſt alſo be very cautious in giving water to the plants while young; and whenever this is done, it ſhould be ſparingly, and the water ſhould be placed either into a heap of dung, or in ſome other warm place, for ſome time before it is uſed, ſo as to be nearly of a temperature for warmth with the incloſed air of the hot-bed; and as the plants advance in height, you ſhould have a little dry ſifted earth always ready to earth up their ſhanks, which will greatly ſtrengthen them. You muſt alſo be very careful to keep up the heat of the bed, which, if you ſhould find decline, you muſt lay a little freſh litter round about the ſides of the bed, and alſo keep the glaſſes well covered in the nights, or in bad weather: but if, on the other hand, your bed ſhould prove too hot, you ſhould thruſt a large ſtake into the ſide of the dung in two or three places, almoſt to the middle of the bed, which will make large holes, through which the greateſt part of the ſteam will paſs off without aſcending to the top of the bed; and when you find it has anſwered your purpoſe by ſlacking the heat of your bed, you muſt ſtop them up again with dung.

Theſe directions, if carefully attended to, will be ſufficient for raiſing the plants in the firſt bed: you muſt therefore, when you perceive the third, or rough leaf begin to appear, prepare another heap of freſh dung, which ſhould be mixed with aſhes, as was before directed; this ſhould be in quantity according to the number of holes you intend to make. The common allowance for ridging out the earlieſt plants is, one load to each light or hole, ſo that the bed will be near three feet thick in dung; but for ſuch as are not ridged out till March, two loads of dung will be ſufficient for three holes, for I could never obſerve any advantage in making theſe beds ſo thick with dung as ſome people do; their crops are ſeldom better, if ſo good, as thoſe which are of a moderate ſubſtance; nor are they forwarder, and the fruit is rarely ſo fair, nor do the Vines continue ſo long in health.

In making theſe beds, you muſt carefully mix the dung, ſhaking it well with the fork, ſo as not to leave any clods of dung unſeparated, as alſo to beat it down pretty cloſe, to prevent the ſteam from riſing too haſtily; you muſt alſo be careful to lay it very even, and to beat or preſs down the dung equally in every part of the bed, otherwiſe it will ſettle in holes, which will be very hurtful. When you finiſh laying the dung, you muſt make a hole exactly in the middle of each light, about a foot deep, and eight or nine inches over; theſe holes muſt be filled with light freſh earth, which ſhould be ſcreened to take out all large ſtones, clods, &c. laying it up in a hill; and in the middle of each thruſt in a ſtick about eighteen inches long, which ſhould ſtand as a mark to find the exact place where the hole is; then earth the bed all over about three inches thick, levelling it ſmooth, and afterwards ſet the frame upon it, covering it with glaſſes; but if there is any apprehenſion of the dung heating too violently, the earth ſhould not be laid upon the bed until the heat is ſomewhat abated, which will be in a few days, and then the earth may be laid upon the bed by degrees, covering it at firſt two inches thick; and a week or ten days after another inch in thickneſs may be laid on, but there ſhould be the whole thickneſs of earth laid upon the bed before the Vines begin to run; and if this thickneſs of earth is at laſt ſix or ſeven inches, the Vines will grow the ſtronger for its being ſo thick; for if the roots are obſerved, they will be found to ſpread and cover the whole bed as much as the Vines extend above; and when the earth is very ſhallow, or too light, the Vines will hang their leaves every day for want of a ſufficient depth of earth to ſupport their roots; ſo that if they are not conſtantly and well watered, they will not have ſtrength to laſt long, nor to produce fair fruit; and the giving them too much water is not ſo proper, nor will it anſwer near ſo well, as the giving a depth of earth upon the dung.

In four or five days time your bed will be in fit order to receive your plants, of which you may eaſily judge by pulling out one of the ſticks which was put in the middle

middle of the holes, and feeling the lower part of it, which will ſatisfy you what condition your bed is in; then you muſt ſtir up the earth in the middle of the hole with your hand, breaking all clods, and removing all large ſtones, making the earth hollow in form of a baſon; into each of theſe holes you muſt plant two plants, in doing of which, obſerve to make the holes for the plants a little ſlanting towards the middle of the baſon, eſpecially if your plants are long ſhanked; this is intended to place the roots of the plants as far as poſſible from the dung, to which if they approach too near, the lower part of their roots is ſubject to be burned off; then ſettle the earth gently to each plant, and, if the earth is dry, it will be proper to give them a little water (which ſhould be warmed to the temper of the bed, as was before directed;) and if the ſun ſhould appear in the middle of the day, they ſhould be ſhaded therefrom with mats until the plants have taken root, which will be in two or three days; after which, you muſt let them enjoy as much of the ſun as poſſible, obſerving to turn the lights in the day time to dry, as alſo to give a little air whenever the weather will permit.

You muſt alſo obſerve to keep the glaſſes covered every night, and in bad weather, but be very careful not to keep them covered too cloſe, eſpecially while the bed has a great ſteam in it, which will cauſe a damp to ſettle upon the plants, which, for want of air to keep the fluid in motion, will ſtagnate and rot them.

When your plants are grown to be four or five inches high, you muſt, with ſome ſlender-forked ſticks, incline them toward the earth, each one a ſeparate way; but this muſt be done gently at firſt, leſt by forcing them too much, you ſhould ſtrain or break the tender veſſels of the plants, which would be very hurtful to them. In this manner you ſhould, from time to time, obſerve to peg down the runners as they are produced, laying each in exact order, ſo as not to interfere or croſs each other; nor ſhould you ever after remove them from their places, or handle them too roughly, whereby the leaves may be broken or diſplaced, which is alſo equally injurious to them; but whenever you have occaſion to weed the bed between the plants, do it with great care, holding the leaves aſide with one hand, while with the other you pull out the weeds.

In about a month after they are ridged out, you may expect to ſee the beginnings of fruit, which very often are preceded by male flowers, which many people are ſo ignorant as to pull off, calling them falſe bloſſoms; but this I am fully convinced, by many experiments, is wrong; for theſe flowers are of abſolute ſervice to promote the welfare of the fruit, which, when theſe male flowers are entirely taken off, does very often fall away, and come to nothing: nor ſhould the Vines be pruned, as is too often the practice of unſkilful people, eſpecially when they are too luxuriant, which often happens when the ſeeds were freſh, or of the laſt year's ſaving, and the plants in good heart. If this ſhould happen to be the caſe, it would be very proper to pull up one of the plants, before they have run ſo far as to entangle with the other; for it often happens, that one or two plants are better than four or five, when they are vigorous; for when the frame is too much crouded with Vine, the fruit is ſeldom good, nor in ſuch plenty, as when there is a more moderate quantity of ſhoots; for the air being hereby excluded from the fruit, they often decay, and fall off very young.

You muſt alſo be very careful to cover the glaſſes every night when your fruit begins to appear, as alſo to lay a little freſh litter, or mowing of graſs round the ſides of the bed, to add a freſh heat thereto; for if the heat of the bed be ſpent, and the nights prove cold, the fruit will fall away and come to nothing; and when the ſun is extreme hot in the middle of the day, you muſt cover the glaſſes with mats to ſhade the Vines; for although they delight in heat, yet the direct rays of the ſun, when it has great force, are very injurious, by either ſcorching thoſe leaves which are near the glaſſes, or by cauſing too great a perſpiration, whereby the extreme part of the ſhoots and the large leaves are left deſtitute of nouriſhment, and the fruit will be at a ſtand, and often turn yellow before it arrives at half its growth; this is too often the caſe, when the beds have not a ſufficient depth of earth over the dung.

At this time, when your Vines are ſpread ſo as to cover the hot-bed, it will be of great ſervice when you water them, to ſprinkle them all over gently ſo as not to hurt the leaves; but obſerve to do this not at a time when the ſun is very hot, for hereby I have known a whole bed of Cucumbers ſpoiled; for the water remaining upon the ſurface of the leaves in drops, doth collect the rays of the ſun as it were to a focus, and ſo ſcorches the leaves, that in one day's time they have, from a bright green, become of the colour of brown paper. The watering of the beds all over will be of great ſervice, by giving nouriſhment to thoſe roots, which by this time will have extended themſelves all over the bed; and if the warmth of the bed ſhould now decline, it will be of great ſervice to add a lining of freſh dung round the ſides of the beds, to give a new heat to them; for as the nights are often cold at this ſeaſon, where the beds have not a kindly warmth left in them, the fruit will frequently drop off the Vines, when grown to the ſize of a little finger; and if upon this lining of dung there is a thickneſs of ſtrong earth laid for the roots of the plants to run into, it will greatly ſtrengthen them, and continue the plants in vigour a much longer time than they otherwiſe will do; for the roots of theſe plants extend to a great diſtance when they have room, which they cannot have in a bed not more than five feet wide; ſo that when they have no greater extent for their roots, the plants will not continue in vigour above five or ſix weeks, which, if they have a depth and extent of earth, will continue three months in bearing; ſo that where there are ſeveral beds made near each other, it will be the beſt way to fill up the bottom of the alleys between them with warm dung, and cover that with a proper thickneſs of earth, ſo as to raiſe them to the level of the beds. Theſe directions, with diligent obſervation, will be ſufficient for the management of this crop of Cucumbers; and Vines thus treated will continue to ſupply you with fruit till the beginning of July, by which time the ſecond crop will come to bear; the ſowing and managing of which is what I ſhall next proceed to.

About the middle of March, or a little later, according to the earlineſs of the ſeaſon, you muſt put in your ſeeds, either under a bell-glaſs, or in the upper ſide of your early hot-bed; and when the plants are come up, they ſhould be pricked upon another moderate hot-bed, which ſhould be covered with bell or hand-glaſſes, placed as cloſe as poſſible to each other; the plants ſhould alſo be pricked at about two inches diſtance from each other, obſerving to water and ſhade them until they have taken new root, which will be in a very ſhort time. This is to be underſtood of ſuch places where a great quantity of plants are required, which is conſtantly the caſe in the kitchen-gardens near London; but where it is only for the ſupply of a family, there may be plants enough raiſed on the upper ſide of the beds where the firſt crop is growing; or if the Vines ſhould have extended themſelves ſo far as to cover the whole bed, whereby there will not be room to prick the plants, a ſingle light will contain a ſufficient number of plants, while young, to plant out in ridges, as will ſupply the largeſt family with Cucumbers during the latter ſeaſon. You muſt alſo cover the glaſſes with mats every night, or in very bad weather; but in the day time, when the weather is hot, you muſt raiſe the glaſſes with a ſtone on the oppoſite ſide from the wind, to give air to the plants, which will greatly ſtrengthen them; you muſt alſo water them as you ſhall find they require it, but this muſt be done ſparingly while the plants are young.

The middle of April the plants will be ſtrong enough to ridge out, you muſt therefore be provided with a heap of new dung, in proportion to the quantity of holes you intend to plant, allowing one load to ſix holes. When your dung is fit for uſe, you muſt dig a trench about two feet four inches wide, and in length juſt as you pleaſe, or the place will allow; and if the ſoil be dry, it ſhould be ten inches deep, but if wet, very little in the ground, levelling the earth in the bottom; then put in your dung, obſerving to ſtir and mix every part of it as was directed for the firſt hot-beds, laying it cloſe and even.

When this is done, you muſt make holes about eight inches over, and ſix inches deep, juſt in the middle of the ridge, and three feet and a half diſtance from each other; and if there be more than one ridge, the diſtance of thoſe ought to be eight feet and a half from each other; then fill the holes with good light earth, putting a ſtick into the middle of each for a mark, and afterwards cover the ridge over with earth about four inches thick, laying the earth the ſame thickneſs round the ſides. When the earth is levelled ſmooth, you muſt ſet the glaſſes on upon the holes, leaving them cloſe down about twenty-four hours, in which time the earth in the holes will be warmed ſufficiently to receive the plants; then with your hand ſtir up the earth in the holes, making it hollowin form of a baſon; into each of which you ſhould plant three or four plants, obſerving to water and ſhade them until they have taken root; after which time you muſt be careful to give them a little air by raiſing the glaſſes on the oppoſite ſide to the wind, in proportion to the heat of the weather, as alſo to water them as you ſhall ſee they require it; but you muſt only raiſe the glaſſes in the middle of the day, until the plants fill the glaſſes, at which time you ſhould raiſe the glaſſes with a forked ſtick on the ſouth ſide, in height proportionable to the growth of the plants, that they may not be ſcorched by the ſun; this alſo will harden and prepare the plants to endure the open air, but you ſhould not expoſe them too ſoon thereto; for it often happens, that there are morning froſts in May, which are many times deſtructive to theſe plants when expoſed thereto; it is therefore the ſureſt method to preſerve them under the glaſſes, as long as they can be kept in without prejudice to the plants; and if the glaſſes are raiſed with two bricks on the backſide, and the forked ſtick on the other ſide, they may be kept in a great while without danger.

Towards the latter end of May, when the weather appears ſettled and warm, you ſhould turn your plants down gently out of the glaſſes; but do not perform this in a very dry, hot, ſunny day, but rather when there is a cloudy ſky, and an appearance of rain; you muſt in doing of this raiſe the glaſſes either upon bricks, or forked ſticks, whereby they may ſtand ſecure at about four or five inches high from the ground, that the plants may lie under them without bruiſing; nor ſhould you take the glaſſes quite away till the latter end of June, or the beginning of July, for theſe will preſerve the moiſture much longer to their roots than if they were quite expoſed to the open air; about three weeks after you have turned the plants out of the glaſſes, they will have made a conſiderable progreſs, eſpecially if the weather has been favourable, at which time you ſhould dig up the ſpaces of ground between the ridges, laying it very even; then lay out the runners of the Vines in exact order, and be careful in this work not to diſturb the Vines too much, nor to bruiſe or break the leaves; this digging of the ground will looſen it, and thereby render it eaſy for the roots of the plants to ſtrike into it, as alſo render the ſurface of the earth more agreeable to the Vines that run upon it. After this there will be no farther care needful, but only to keep them clear from weeds, and to water them as often as they ſhall require, which they will ſoon ſhew, by the hanging of their greater leaves. The ridges, thus managed, will continue to produce large quantities of fruit from June until the latter end of Auguſt, after which time the coldneſs of the ſeaſon renders them unwholeſome, eſpecially if the autumn prove wet.

From theſe ridges people commonly preſerve their Cucumbers for ſeed, by making choice of two or three of the faireſt fruit upon each hole, never leaving above one upon a plant, and that ſituated near the root of it; for if you leave more, they will weaken the plant ſo much, that your other fruit will be ſmall, and fewer in number: but thoſe perſons who value themſelves upon producing Cucumbers very early, commonly leave three or four Cucumbers of the firſt produce of their earlieſt crop, when the fruit is fair; and the ſeeds of theſe early fruit, are generally preferred to any other for the firſt crop. Theſe ſhould remain upon the Vines until the middle or end of Auguſt, that the ſeeds may be perfectly ripe; and when you gather them from the Vines, it will be proper to ſet the fruit in a row upright againſt a hedge or wall, where they may remain until the outer cover begins to decay; at which time you ſhould cut them open, and ſcrape out the ſeeds, together with the pulp, into a tub, which ſhould be afterwards covered with a board, to prevent filth from getting amongſt the pulp. In this tub it ſhould be ſuffered to remain eight or ten days, obſerving to ſtir it well with a long ſtick to the bottom every day, in order to rot the pulp, that it may be eaſily ſeparated from the ſeeds; then pour ſome water into the tub, ſtirring it well about, which will raiſe the ſcum to the top, but the ſeeds will ſettle to the bottom; ſo that by two or three times pouring in water, and afterwards ſtraining it off from the ſeeds, they will be perfectly cleared from the pulp; then you ſhould ſpread the ſeeds upon a mat, which ſhould be expoſed to the open air three or four days until they are perfectly dry, when they may be put up in bags, and hung up in a dry place where vermin cannot come to them, where they will keep good for ſeveral years, but are generally preferred when three or four years old, as being apt to produce leſs vigorous, but more fruitful plants.

I ſhall, in the next place, proceed to give directions for managing Cucumbers for the laſt crop, or what are generally called picklers.

The ſeaſon for ſowing theſe is towards the latter end of May, when the weather is ſettled. The ground where theſe are commonly ſown, is between Cauliflowers, in the wide rows, between which are allowed four feet and a half ſpace when the Cauliflowers were planted. In theſe rows you ſhould dig up ſquare holes at about three feet and a half diſtance from each other, breaking the earth well with a ſpade, and afterwards ſmoothing and hollowing it in the form of a baſon with your hand; then put eight or nine ſeeds into the middle of each hole, covering them over with earth about half an inch thick; and if it ſhould be very dry weather, it will be proper to water the holes gently in a day or two after the ſeeds are ſown, in order to facilitate their vegetation.

In five or ſix days, if the weather be good, your plants will begin to thruſt their heads above ground; at which time you ſhould be very careful to keep off the ſparrows, which are very fond of the young tender ſeed-leaves of theſe plants; and, if they are not prevented, will deſtroy your whole crop: but as it is not above a week that the plants are in danger, it will be no great trouble to look after them during that time; for when the plants are come up, and have expanded their ſeed leaves, the ſparrows will not meddle with them.

You muſt alſo be careful to water them gently, as you find the drought of the ſeaſon may require; and when you perceive the third or rough leaf of the plants begin to appear, you muſt pull out all the weakeſt plants, leaving only three or four of the moſt promiſing and beſt ſituated in each hole, ſtirring the earth round about them with a ſmall hoe to deſtroy the weeds, and raiſe the earth about the ſhanks of the plants, putting a little earth between them, preſſing it gently down with your hand, that the plants

may

may be thereby ſeparated from each other to a greater diſtance; then give them a little water (if the weather be dry) to ſettle the earth about them, which you muſt afterwards repeat as often as you ſhall find it neceſſary, ſtill being careful to keep the ground clear from weeds.

When your Cauliflowers are quite drawn off the ground from between the Cucumbers, you muſt hoe and clean the ground, drawing the earth up round each hole in form of a baſon, the better to contain the water when it is given them; you muſt alſo lay out the plants in exact order as they are to run and extend, ſo that they may not interfere with each other; then lay a little earth between the plants left, preſſing it down gently with your hand, the better to ſpread them each way, giving them a little water to ſettle the earth about them, repeating it as often as the ſeaſon ſhall require, and obſerving to keep the ground clean from weeds. The plants thus managed, will begin to produce fruit toward the latter end of July, when you may either gather them young for pickling, or ſuffer them to grow for large fruit.

The quantity of holes neceſſary for a family, is about fifty or ſixty; for if you have fewer, they will not produce enough at one gathering to make it worth the trouble and expence of pickling, without keeping them too long in the houſe, for you cannot expect to gather more than two hundred at each time from fifty holes; but this may be done twice a week during the whole ſeaſon, which commonly laſts five weeks; ſo that from fifty holes you may reaſonably expect to gather about two thouſand in the ſeaſon, which, if they are taken ſmall, will not be too many for a private family. And if ſo many are not wanted, they may be left to grow to a proper ſize for eating.

CUCUMIS AGRESTIS. See MOMORDICA.

CUCURBITA. Lin. Gen. Plant. 968. Tourn Inſt. R. H. 107. [ſo called from Curvata, *Lat.* bended, becau ſethe fruit of this plant generally bends,] the Gourd.

The CHARACTERS are,

It hath male and female flowers in the ſame plant. The flowers have a bell-ſhaped empalement of one leaf, whoſe borders are terminated by five briſtles; the flowers are bell-ſhaped, adhering to the empalement, and are of one petal, which is veined and rough, divided at the top into five parts. The male flowers have three ſtamina, which are connected at their extremity, but are diſtinct at their baſe, where they adhere to the empalement; theſe are terminated by linear ſummits running up and down. The female flowers have a large germen, ſituated under the flower, ſupporting a conical trifid ſtyle, crowned by a large trifid ſtigma. The germen afterward becomes a large fleſhy fruit, having three ſoft membranaceous cells which are diſtinct, incloſing two rows of ſeeds which are bordered.

This genus of plants is ranged in the tenth ſection of Linnæus's twenty-firſt claſs, intitled Moncœcia Syngeneſia, the plants having male and female flowers on the ſame plant, and the ſtamina of the male flowers being connected.

The SPECIES are,

1. CUCURBITA (*Lagenaria*) foliis cordatis denticulatis tomentoſis baſi ſubtus biglanduloſis; pomis lignoſis. Lin. Sp. 1434. *Gourd with heart-ſhaped, indented, woolly leaves, having two glands at their baſe, and a ligneous ſhell to the fruit.* Cucurbita longa, folio molli, flore albo. J. B. 2. 221. *Commonly called the Long Gourd.*
2. CUCURBITA (*Pepo*) foliis lobatis, pomis lævibus. Lin. Sp. Plant. 1010. *Gourd with lobed leaves and a ſmooth fruit.* Cucurbita major rotunda, flore luteo, folio aſpero. C. B. P. 213. *Commonly called Pompion, or Pumpkin.*
3. CUCURBITA (*Verrucoſa*) foliis lobatis, pomis nodoſo-verrucoſis. Lin. Sp. Plant. 1010. *Gourd with lobed leaves, and a warted knobby fruit.* Cucurbita verrucoſa. J. B. 2. 222. *Warted Gourd.*
4. CUCURBITA (*Melopepo*) foliis lobatis, caule erecto, pomis depreſſo-nodoſis. Lin. Sp. Plant. 1010. *Gourd with lobed leaves, an erect ſtalk, and a depreſſed knotty fruit.* Melopepo clypeiformis. C. B. P. 312. *Commonly called Squaſh.*
5. CUCURBITA (*Lignoſus*) foliis lobatis aſperis, flore luteo, pomis lignoſis. *Gourd with rough-lobed leaves, a yellow flower, aud fruit having a hard ſhell; commonly called Calabaſh.*

The firſt ſort is ſometimes propagated in the Engliſh gardens by way of curioſity, but the fruit is very rarely eaten here; though, if they are gathered when they are young, while their ſkins are tender, and boiled, they have an agreeable flavour. In the eaſtern countries theſe fruit are very commonly cultivated and ſold in the markets for the table, and are a great part of the food of the common people, from June to October. Theſe fruit are alſo eaten in both the Indies, where the plants are cultivated as culinary; and in thoſe countries, where the heat of their ſummers is too great for many of our common vegetables, theſe may be a very good ſubſtitute.

This ſort doth not vary like moſt of the others, but always produces the ſame ſhaped fruit; the plants of this extend to a great length, if the ſeaſon proves warm and favourable, and will then produce ripe fruit; but in cold ſummers, the fruit ſeldom grows to half its uſual ſize. I have meaſured ſome of theſe fruit when growing, which were ſix feet long, and a foot and a half round; the plants were near twenty feet in length: the ſtalks of this, and alſo the leaves, are covered with a fine ſoft hairy down; the flowers are large, white, and ſtand upon long foot-ſtalks, being reflexed at their brim; the fruit is generally incurved and crooked, and when ripe, is of a pale yellow colour. The rind of this fruit becomes hard, ſo that if the ſeeds and pulp are taken out, and the ſhell dried, it will contain water; and in thoſe countries where they are much cultivated, are uſed for many purpoſes.

The ſecond ſort, which is commonly known by the title of Pumpkin, is frequently cultivated by the country people in England, who plant them upon their dunghills, where the plants run over them, and ſpread to a great diſtance; when the ſeaſons are favourable, they will produce plenty of large fruit: theſe they uſually ſuffer to grow to maturity, then they cut open a hole on one ſide, and take the ſeeds out of the pulp as clean as poſſible, after which they fill the ſhell with Apples ſliced, which they mix with the pulp of the fruit, and ſome add a little ſugar and ſpice to it; then bake it in an oven, and eat it in the ſame manner as baked Apples; but this is a ſtrong food, and only fit for thoſe who labour hard, and can eaſily digeſt it.

Theſe may be propagated by ſowing their ſeeds in April, on a hot-bed; and when the plants come up, they ſhould be tranſplanted on another moderate bed, where they ſhould be brought up hardily, and have a great deal of air to ſtrengthen them; and when they have got four or five leaves, they ſhould be tranſplanted into holes made upon an old dunghill, or ſome ſuch place, allowing them a great deal of room to run, for ſome of the ſorts will ſpread to a great diſtance. I have meaſured a ſingle plant, which had run upwards of forty feet from the hole, and had produced a great number of ſide branches; ſo that if the plant had been encouraged, and all the ſide branches permitted to remain, I dare ſay it would have fairly overſpread twenty rods of ground; which, to ſome people, may ſeem like a romance, yet I can affirm it to be fact. But what is this to the account printed in the Tranſactions of the Royal Society, which was communicated to them by Paul Dudley, Eſq; from New England, wherein mention is made of a ſingle plant of this kind, which, without any culture, ſpread over a large ſpot of ground, and from which plant were gathered two hundred and ſixty fruits each, one with another, as big as a half peck.

There are ſeveral varieties of this fruit, which differ in their form and ſize; but as theſe are annually varying from ſeeds, ſo I have omitted the mentioning them, for they ſeldom continue to produce the ſame kinds of fruit three years together.

The

The third ſort is very common in moſt parts of America, where it is cultivated as a culinary fruit; of this ſort there are alſo ſeveral varieties, which differ in their form and ſize; ſome of theſe are flat, others round; ſome are ſhaped like a bottle, and others are oblong, their outer cover or rind being white when ripe, and covered with large protuberances or warts. The fruit are commonly gathered when they are half grown, and boiled by the inhabitants of America to eat as a ſauce with their meat; but in England they are only cultivated by way of curioſity, few perſons having a reliſh for them here, where they have a great variety of better eſculent plants at that ſeaſon, when theſe are fit for uſe. Theſe may be propagated in the ſame manner as the ſecond ſort.

The fourth ſort is alſo very common in North America, where it is cultivated for the ſame purpoſes as the third. This very often grows with a ſtrong, buſhy, erect ſtalk, without putting out runners from the ſide, as the other ſorts, but frequently varies; for after it has been cultivated a few years in the ſame garden, the plants will become trailing like the others, and extend their branches to as great diſtance; and yet I have known when part of the ſeeds, taken out from the ſame fruit have been ſown in another garden, at a conſiderable diſtance, the fruit have been the ſame, and the plants have grown erect, when thoſe which were ſown in the ſame garden, have produced trailing plants with larger fruit of a different ſhape.

The fruit of the fifth ſort hath a hard ſhell when ripe like the firſt, which may be dried and preſerved many years: theſe are of very different forms and ſize; ſome are ſhaped like a Pear, and are no bigger than a large Catherine Pear; ſome are as large as quart bottles, and almoſt of the ſame form; others are round and ſhaped like an Orange, and are of the ſame ſize and colour, but theſe are very variable; for I have cultivated moſt of the ſorts near forty years, and have not been able, with all poſſible care, to preſerve the varieties longer than two or three years in the ſame garden, without procuring freſh ſeeds from ſome diſtant place. Whether theſe changes are brought about by the admixture of the farina with each other, or from what cauſe I cannot ſay, becauſe I have frequently planted them at as great diſtance from each other as I poſſibly could in the ſame garden, and yet the effect has been the ſame as when near.

The firſt ſort requires to be treated more tenderly than the others, in order to procure ripe fruit; ſo the ſeeds ſhould be ſown upon a moderate hot-bed in April, and the plants afterward planted each into a penny pot, and plunged into a very moderate hot-bed to bring them forward; but they muſt not be tenderly treated, for if they have not a large ſhare of free air admitted to them every day, they will draw up weak. When the plants are grown too large to be continued in the pots, there ſhould be holes dug where they are deſigned to grow, and three or four barrows full of hot dung put into each; theſe ſhould be covered with earth, into which the plants muſt be planted, and covered with hand-glaſſes till they run out.

There are ſome people who plant theſe plants by the ſides of arbours, over which they train the vines; ſo that in a ſhort time they will cover the whole arbour, and afford a ſtrong ſhade, and upon ſome of theſe arbours I have ſeen the longeſt fruit. There are others who plant them near walls, pales, or hedges, to which they faſten the Vines, and train them to a great height: the Orange-ſhaped Gourd is the ſort which is moſt commonly ſo planted for the ornament of its fruit, which has a pretty effect, eſpecially when ſeen at ſome diſtance. All the ſorts require a large ſupply of water in dry weather.

Theſe plants requiring ſo much room to ſpread, and their fruit being very little valued in England, hath occaſioned their not being cultivated amongſt us; we having ſo many plants, roots, or fruits, which are

greatly preferable to thoſe for kitchen uſes: but in ſome parts of America, where proviſions are not in ſo great plenty, or ſo great variety, theſe fruits may be very acceptable.

CUIETE See CRESCENTIA.

CULMIFEROUS PLANTS [ſo called of Culmus, *Lat.* ſtraw or haulm,] are ſuch as have a ſmooth jointed ſtalk, uſually hollow, and at each joint wrapped about with ſingle, narrow, ſharp-pointed leaves; and their ſeeds are contained in chaffy huſks, as Wheat, Barley, &c.

CUMINOIDES. See LAGOECIA.

CUMINUM. Lin. Gen. Plant. 313. Mor. Umb. Κύμινον, *Gr.* Cumin.

The CHARACTERS are,

It hath an umbelliferous flower; the general umbel is compoſed of ſmaller, which are divided into four parts; their involucrum is longer than the umbel. The great umbel is uniform; the flowers have five unequal petals, whoſe borders are inflexed, and five ſingle ſtamina, terminated by ſlender ſummits. It hath a large germen ſituated under the flower, ſupporting two ſmall ſtyles, crowned by ſingle ſtigmas. The germen afterward becomes an oval ſtriated fruit, compoſed of two oval ſeeds, which are convex and furrowed on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

We have but one SPECIES of this genus, viz.

CUMINUM (*Cyminum.*) Lin. Mat. Med. 139. Cumin. Cuminum ſemine longiore. C. B. P. 146. *Cumin with a longer ſeed.*

This plant is annual, periſhing ſoon after the ſeeds are ripe; it ſeldom riſes more than nine or ten inches high, in the warm countries where it is cultivated; but I have never ſeen it grow more than three or four inches high in England, where I have ſometimes had the plants come ſo far as to flower very well, but never to produce ſeeds. The leaves of this plant are divided into long narrow ſegments like thoſe of Fennel, but much ſmaller; they are of a deep green, and generally turn backward at their extremity; the flowers grow in ſmall umbels at the top of the ſtalks; theſe are compoſed of five unequal petals, which are of a pale bluſh colour, and are ſucceeded by long, channelled, aromatic ſeeds.

The ſeeds of this plant is the only part uſed in medicine; theſe are ranged among the greater hot ſeeds; they conſiſt of very warm diſſolving parts, and are eſteemed good to expel wind out of the ſtomach and bowels, ſo they are frequently put into clyſters for that purpoſe, and are ſometimes given in powder; and outwardly applied, they are of great ſervice to eaſe the pains of the breaſt or ſide.

This plant is propagated for ſale in the iſland of Malta, where it is called Cumino aigro, i. e. *hot Cumin.* But Aniſe, which they alſo propagate in no leſs quantity, they call Cumino dulce, i. e. *ſweet Cumin.* So that many of the old botaniſts were miſtaken, when they made two ſpecies of Cumin, viz. acre and dulce.

If the ſeeds of this plant are ſown in ſmall pots filled with light kitchen-garden earth, and plunged into a very moderate hot-bed to bring up the plants, and theſe after having been gradually inured to the open air, turned out of the pots, and planted in a warm border of good earth, preſerving the balls of earth to their roots, and afterward kept clean from weeds, the plants will flower pretty well, and by thus bringing of the plants forward in the ſpring, they may perfect their ſeeds in very warm ſeaſons.

CUNILA. See SIDERITIS.

CUNONIA. Buttn. Cun. tab. 1. Antholyza. Lin. Gen. Plant. 56.

The CHARACTERS are,

The flowers grow alternate in an imbricated ſpike, each having a ſpatha or ſheath, compoſed of two ſpear-ſhaped concave leaves; the flower hath one ringent petal, having a ſhort ſlender tube, which is dilated at the chaps, and compreſſed on the ſides; the upper lip is arched, and

ſtretched

ſtretched out a conſiderable length beyond the alæ or wings, and is rounded at the top: it hath three long ſlender ſtamina, which are ſituated in the upper lip, terminated by oblong flat ſummits, which are faſtened in their middle and lie proſtrate. It hath a ſlender ſtyle, which is ſhorter than the ſtamina, crowned by three cylindrical ſtigmas which join the ſummits, and are included in the upper lip. The germen, which is ſituated below the flower, becomes an oblong capſule with three cells, filled with compreſſed ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's third claſs, intitled Triandria Monogynia, the flowers having three ſtamina and one ſtyle, but he has joined it to the Antholyza, making it only a ſpecies of that genus; whereas by the form and characters of the flower, it ſhould be ſeparated from that, there being full as great difference between the flowers of this and thoſe of the Antholyza, as is between thoſe and the Gladiolus; for the flowers of Cunonia have no carina or under lip, but thoſe of the Antholyza have, in which one of the ſtamina is included, which is ſeparated from the other two, which are ſituated in the upper lip; but in this all three are of equal length, and ſituated in the hollow of the upper lip. The two wings of this are ſhort, whereas thoſe of Antholyza are long, ſo that I think they ſhould be ſeparated.

We have but one Species of this genus at preſent in the Engliſh gardens, which is

Cunonia (*Antholyza*) floribus ſeſſilibus, ſpathis maximis. Buttn. Cun. 211. tab. 1. *Cunonia with flowers ſitting cloſe to the ſtalk, and very large ſpathæ or ſheaths.* Dr. Linnæus titles it Antholyza ſtaminibus omnibus adſcendentibus. Sp. Plant. 37. *Antholyza with all the ſtamina aſcending.*

There is a plant of this kind figured in Cornutus's book of Canada plants, under the title of Gladiolus Æthiopicus, flore Coccineo, p. 78. but by his figure and deſcription, it appears to be a different ſpecies from this, his flowers having much ſmaller ſpathæ or ſheaths, nor does the ſtalks of his riſe near ſo high as this; there are alſo ſome other differences between them.

The ſeeds of this plant I received from the Cape of Good Hope, where it grows naturally, which ſucceeded ſo well in the Chelſea garden, as to produce a great number of plants, which flowered well the third ſeaſon after they appeared, and have continued to produce flowers, and perfect their ſeeds every year ſince.

This hath a compreſſed bulbous root, ſomewhat like that of Corn Flag, covered with a brown ſkin; from this ariſe ſeveral narrow ſword-ſhaped leaves, about nine inches long, and a quarter of an inch broad in the middle, terminating in acute points; theſe have one longitudinal midrib which is prominent, and two longitudinal veins running parallel on each ſide; they are of a ſea-green colour, and appear in autumn, growing in length all the winter; in ſpring the ſtalk ariſes from between the leaves, which is round, ſtrong, and jointed; at each joint is ſituated a ſingle leaf, which almoſt embraces the ſtalk for near three inches from the baſe, then by the curvature of the ſtalk it is ſeparated, ſtanding erect: the ſtalks riſe near a foot and a half high, which is generally curved two oppoſite ways; the upper part of the ſtalk is terminated by a looſe ſpike of flowers, coming out of large ſpathæ or ſheaths, compoſed of two oblong concave leaves, terminating in acute points: theſe are at their firſt appearance placed imbricatim over each other, but as the ſtalk increaſes in length, ſo theſe are ſeparated; from between theſe two leaves comes out the flower, each having a ſlender Saffron-coloured tube near half an inch long, which is then enlarged where the petal is divided, and the upper ſegment is extended two inches in length, being arched over the ſtamina and ſtyle. This is narrow as far as to the extent of the wings, but above them is enlarged and ſpread open half an inch in length, and is concave, covering the ſummits and ſtigmas which are extended to that length; the two wings are alſo narrow at their baſe, but are enlarged upward in the ſame manner, ending in concave obtuſe points, which are compreſſed together, and cover the ſtamina and ſtyle. This flower is of a beautiful ſoft ſcarlet colour, ſo makes a fine appearance, about the latter end of April or beginning of May, which is the ſeaſon of its flowering. After the flowers decay, the germen becomes an oval ſmooth capſule, opening in three cells, which are filled with flat bordered ſeeds.

This plant is too tender to thrive in the open air in England, ſo the roots muſt be planted in pots filled with light earth, and may remain in the open air till October, when they muſt be removed into ſhelter, either into an airy glaſs-caſe, or placed under a hot-bed frame, where the leaves will keep growing all winter, and in the ſpring the ſtalks ariſe and flower. During the winter ſeaſon, the plants will require a little water when the weather is mild, once a week, but it muſt not be given in great quantities, eſpecially in cold weather; in the ſpring they ſhould be watered oftener; and when the flowers are paſt, the pots ſhould be removed into the open air to perfect their ſeeds, which will ripen the latter end of June, ſoon after which the ſtalks will decay to the root, which will remain inactive till September. When the ſtalks are decayed, the roots may be taken out of the ground, and kept in a dry room till the end of Auguſt, when they ſhould be planted again.

This plant is eaſily propagated by offsets, which it ſends out in great plenty, or by ſowing of the ſeeds, which ſhould be ſown in pots about the middle of Auguſt, and placed in a ſituation where they may enjoy the morning ſun, and in dry weather ſhould be gently watered; in September the pots may be removed to a warmer ſituation, and in October they muſt be placed under a frame, where they may be protected from froſt and hard rains, but in mild weather enjoy the free air. The plants will appear in October, and continue growing all the winter, and in June their leaves will decay; then they may be taken up, and four or five roots may be planted in each pot, till they have grown another year, when they may be each put into a ſeparate pot. Theſe ſeedling plants muſt be ſheltered in the ſame manner as the old roots in winter, and the third year they will flower.

CUPRESSUS. Lin. Gen. Plant. 958. Tourn. Inſt. R. H. 587. tab. 358. Cypreſs [takes its name either of κύω, to bring forth, and πάρισος, becauſe it produces equal branches on both ſides; or of Cypariſſus, a certain infant whom the poets feign to have been transformed into a Cypreſs-tree.] The Cypreſs-tree.

The Characters are,

It hath male and female flowers growing at diſtances on the ſame plant; the male flowers are formed into oval katkins, in which the flowers are placed thinly, among ſeveral roundiſh ſcales, each having a ſingle flower. Theſe have no petals nor ſtamina, but have four ſummits which adhere to the bottom of the ſcales. The female flowers are formed in a roundiſh cone, each containing eight or ten flowers; the ſcales of the cones are oppoſite, each having a ſingle flower, theſe have no petals; the germen is ſcarce viſible, but under each ſcale there are many punctures or ſpots, and a concave truncated apex inſtead of a ſtyle; this afterward becomes a globular cone, opening in angular target-ſhaped ſcales, under which are ſituated angular ſeeds.

This genus of plants is ranged in the ninth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Monadelphia; the plants of this ſection have male and female flowers on the ſame plant, and the male flowers are joined in one bdoy.

The Species are,

1. Cupressus (*Sempervirens*) foliis imbricatis, ramis erectioribus. *Cypreſs with imbricated leaves, and upright branches.* Cupreſſus metâ in faſtigium convolutâ qua fæmina. Plinii. Dod. Pempt. 856. *Female or common upright Cypreſs.*

2. Cupressus (*Horizontalibus*) foliis imbricatis acutis, ramis horizontalibus. *Cypreſs with imbricated acute leaves, and branches growing horizontally.* Cupreſſus ramos extra ſe ſpargens quæ Mas. Plinii. Tourn. Inſt. R. H. 587. *Male ſpreading Cypreſs.*
3. Cupressus (*Luſitanica*) foliis imbricatis, apicibus aculeatis, ramis dependentibus. *Cypreſs with imbricated leaves terminating in ſpines, and branches hanging downward.* Cupreſſus Luſitanica, patula, fructu minore. Inſt. R. H. 587. *Portugal ſpreading Cypreſs with a ſmaller fruit.*
4. Cupressus (*Diſticha*) foliis diſtichis patentibus. Hort. Cliff. 409. *Cypreſs with leaves on two ſides the branches.* Cupreſſus Virginiana foliis Acaciæ deciduis. Hort. Amſt. 1. p. 113. *Virginia Cypreſs which ſheds its leaves, commonly called Deciduous Cypreſs.*
5. Cupressus (*Thyoides*) foliis imbricatis, frondibus ancipitibus. Lin. Sp. Plant. 1003. *Cypreſs with imbricated leaves, and branches ſtanding two ways.* Cupreſſus nana Mariana, fructu cæruleo parvo. Pluk. Mant. 61. *Dwarf Maryland Cypreſs with a ſmall blue fruit.*
6. Cupressus (*Africana*) foliis linearibus ſimplicibus cruciatim poſitis. *Cypreſs with narrow ſingle leaves placed croſſways.* Cupreſſus Africana of Herman and Oldenburgh. *African Cypreſs-tree, called by the Dutch Cypreſs Boom.*

The firſt of theſe trees is very common in moſt of the old gardens in England, but at preſent is not ſo much in requeſt as formerly, though it is not without its advantages; nor ſhould it be entirely rejected, although many perſons are of that opinion; for it ſerves to add to the beauty of wilderneſſes, or clumps of Evergreens, and where they are properly diſpoſed, they have their beauties. It was formerly planted in borders of pleaſure-gardens, and kept ſhorn into a pyramidal or conic form; and ſome people, believing them ſubject to be killed if they cut them, tied them up with cords into a pyramidal figure, which form they are naturally diſpoſed to grow in; but this winding them about, prevented the air from entering the inward parts of the branches, ſo that the leaves decayed, and became unſightly, and greatly retarded their growth. And thoſe which are ſheared, if the operation is not performed in the ſpring, or early in the ſummer, are very ſubject to be injured by ſharp winds and cuttings froſts in winter. Wherefore, upon the whole, I think it much better to ſuffer them to grow wild as they are naturally diſpoſed, planting them only amongſt other Evergreen Trees; where, by the darkneſs of their green leaves, together with their waving heads, they will greatly add to the variety.

The ſecond ſort is by far the largeſt growing tree, and is the moſt common timber in ſome parts of the Levant. This, if planted upon a warm, ſandy, gravelly ſoil, will proſper wonderfully; and though the plants of this ſort are not ſo finely ſhaped as thoſe of the firſt, yet they greatly recompenſe for that defect, by its vigorous growth and ſtrength, in reſiſting all weathers. This tree is very proper to intermix with Evergreens of a ſecond ſize next to Pines and Firs, to form clumps; in which claſs it will keep pace with the trees of the ſame line, and be very handſome. Beſides, the wood of this tree is very valuable, when grown to a ſize fit for planks, which I am convinced it will do in as ſhort a ſpace as Oaks; therefore, why ſhould not this be cultivated for that purpoſe, ſince there are many places in England where the ſoil is of a ſandy or gravelly nature, and ſeldom produces any thing worth cultivating? Now, in ſuch places theſe trees will thrive wonderfully, and greatly add to the pleaſure of the owner, while growing, and afterwards render as much profit to his ſucceſſors, as perhaps the beſt plantation of Oaks; eſpecially ſhould the timber prove as good here, as in the iſlands of the Archipelago, which I ſee no reaſon to doubt of; for we find it was ſo gainful a commodity to the iſland of Candia, that the plantations were called Dos Filiæ, the felling of one of them being reckoned a daughter's portion.

The timber of this tree is ſaid to reſiſt the worm, moth, and all putrefaction, and is ſaid to laſt many hundred years. The doors of St. Peter's church at Rome were framed of this material, which laſted from the great Conſtantine to Pope Eugenius IVth's time, which was eleven hundred years, and were then found and entire, when the Pope would needs change them for gates of braſs. The coffins were made of this material, in which Thucydides tells us the Athenians uſed to bury their heroes; and the mummy cheſts, brought with thoſe condited bodies out of Egypt, are many of them of this material.

This tree is by many learned authors recommended for the improvement of the air, and a ſpecific for the lungs, as ſending forth great quantities of aromatic and balſamic ſcents; wherefore many of the antient phyſicians of the Eaſtern countries uſed to ſend their patients, who were troubled with weak lungs, to the iſland of Candia, which at that time abounded with theſe trees, where, from the effects of the air alone, very few failed of a perfect cure.

The fourth ſort is a native of America, where it grows in watery places, and riſes to a prodigious height, and is of a wonderful bulk. I have been informed, that there are trees of this kind in America which are upwards of ſeventy feet high, and ſeveral fathoms in circumference, which trees grow conſtantly in the water; therefore they may probably be of ſingular advantage to plant in ſuch ſwampy or wet ſoils, where few other trees will grow, eſpecially of the reſinous kind. That they are very hardy in reſpect to cold, is evident, from ſome few trees of this kind which were formerly planted in England; particularly one in the gardens of John Tradeſcant, at South Lambeth, near Vaux-Hall, which is upwards of thirty feet high, and of a conſiderable bulk, which, though in a common yard at preſent, where no care is taken of it, but, on the contrary, many hooks are driven into the trunk, to faſten cords thereto for drying of cloaths, yet the tree is in great health and vigour, but hath not produced any fruit as yet, which may be occaſioned for want of moiſture: for we often ſee many aquatic plants will grow upon a drier ſoil, but yet are ſeldom ſo productive of either flowers or fruit, as thoſe which remain growing in the water.

There is alſo a pretty large tree of this kind now growing in the gardens of the late Sir Abraham Janſſen, Bart. at Wimbleton in Surry, which has produced great quantities of cones for ſome years paſt, which, in favourable ſeaſons come to maturity, and the ſeeds have been as good as thoſe which have been brought from America. This tree was tranſplanted when it was very large, which has ſtinted its growth; which, together with its being planted upon a dry ſoil, may have occaſioned its fruitfulneſs, for it has made very little progreſs in its growth ſince it was removed.

Theſe trees are all propagated from ſeeds, which ſhould be ſown early in the ſpring on a bed of warm, dry, ſandy earth, which muſt be levelled very ſmooth; then ſow the ſeeds thereon pretty thick, ſifting the ſame light earth over them half an inch thick. If the weather ſhould prove very warm and dry, it will be proper to ſhade the bed from the ſun in the daytime, and water the bed, which muſt be done very carefully, obſerving not to waſh the ſeeds out of the ground. In about two months time (if your ſeeds are good) the young plants will appear above ground, which muſt be conſtantly kept clean from weeds, and in very dry weather ſhould be often refreſhed with water; but this ſhould be done with great caution, leſt you beat theſe tender rooted plants out of the ground. If the ſeeds are ſown upon a moderate hot-bed, and the bed covered with mats, they will come up much ſooner, and with greater certainty, than when they are ſown in the cold ground.

In this bed the young plants may remain two years, by which time they will have ſtrength enough to be tranſplanted into a nurſery; but while the plants are young, they are tender, ſo ſhould be covered in ſevere froſt with mats to prevent their being injured thereby.

thereby. The beſt ſeaſon for removing them is in the beginning of April, when the drying eaſterly winds of March are over, and, if poſſible, chooſe a cloudy day, when it is inclinable to rain; and in taking them out of the ſeed-bed, preſerve the roots as entire as poſſible, and, if you can, a ball of earth to each plant. The ſoil in which theſe trees ſhould be planted (as I before ſaid) ſhould be, for the two firſt ſorts, a warm ſand or gravel, which, when you have prepared, by carefully digging and cleanſing from all noxious weeds, you muſt lay level. Then draw the lines where the trees are to be planted at three feet aſunder, and plant the trees at eighteen inches diſtance in the rows, obſerving to cloſe the earth well to their roots, as alſo to lay a little mulch upon the ſurface of the ground about their ſtems; and water them well to ſettle the earth to their roots, which ſhould be repeated twice a week, until the plants have taken freſh root.

Theſe plants may remain in the nurſery three or four years, according to the progreſs they make, or till your ground is ready where they are to be planted: but if you intend to let them remain longer, you ſhould take up every other tree in the rows, and tranſplant out; for otherwiſe their roots will be matted together, ſo that it will render it difficult to tranſplant them, as alſo endanger the future growth of the trees. The plants ſhould by no means be let ſtand too long in the nurſery before they are tranſplanted out for good, becauſe the roots do not mat together ſo cloſely as thoſe of many other ſorts of Evergreen Trees, whereby they may be taken up with good balls of earth to their roots; but the roots of the Cypreſs are apt to extend out in length, ſo it is one of the moſt difficult trees to remove when grown large; therefore moſt curious perſons chooſe to plant the young plants into ſmall pots, when they firſt take them out of the ſeed-bed, and ſo train them up in pots two or three years, until they are fit to plant out where they are to ſtand for good, and, by this management, they are ſecure of all the plants; for theſe may be ſhaken out of the pots at any time of the year without danger, and planted with their whole ball of earth, which is likewiſe a great advantage. When they are planted out for good (if they are deſigned for timber) they ſhould be planted about twelve or fourteen feet diſtance every way, and be very careful in removing thoſe in the full ground, not to ſhake the earth from their roots; to prevent which, you ſhould open the ground about each tree, cutting off all long roots, then working under the ball of earth, cut the downright roots off; and after having pared off all the earth from the upper part of the ball, as alſo reduced the bulk of it, ſo that its weight may not be too great for the fibres to ſupport, they may be carried upon a hand-barrow by two perſons to the place where they are to be planted; but if they are to be carried to a diſtant place, they ſhould either be put into baſkets, or their roots cloſely matted up. When they are planted, you muſt ſettle the earth cloſe to their roots as before, laying a little mulch upon the ſurface of the ground about their ſtems, to prevent the ſun and wind from entering the earth to dry their fibres; and water them well, to ſettle the ground to their roots, which muſt alſo be repeated, if the weather proves dry, until they have taken root, after which time they will require little more care than to keep them clear from weeds.

The firſt, which is the moſt common ſort in England, ſeldom produces good ſeeds in this country; it is therefore the beſt way to have the cones brought over entire from the ſouth parts of France and Italy, where they ripen perfectly well, and take the ſeeds out juſt before you ſow them, for they will keep much better in the cones than if they are taken out. The method to get the ſeeds out is to expoſe the cones to a gentle heat, which will cauſe them to open, and eaſily emit their ſeeds.

The ſecond ſort grows naturally in the Levant, and from thence it has been formerly brought to Italy, but at preſent this is pretty rare in England; for what has paſſed under this title here, is only a variety of the common ſort, whoſe branches grow much looſer, and not ſo upright as the firſt; but the cones taken from theſe trees, and the ſeeds ſown, have frequently produced plants of both varieties; but the true ſpreading Cypreſs extends its branches horizontally from the firſt year, and continues to extend them to a great length as the plants advance, and the plants raiſed from the ſeeds do not vary, ſo that it is certainly a diſtinct ſpecies. This grows to be a large timber tree in the Levant, and in Italy there are ſome of a conſiderable ſize.

The Virginian kind may alſo be propagated in as great plenty, for the cones of this may be eaſily procured from Carolina or Virginia, in both which places they grow in great abundance; and the ſeeds will riſe as eaſily as any of the other ſorts, and the plants are equally as hardy: theſe have been formerly kept in pots, and houſed in winter, with which management they have not ſucceeded ſo well as they have done in England, ſince people have planted them into the full ground; and where they have had a moiſt ſoil, I have obſerved them to thrive beſt, which is ſince confirmed by Mr. Cateſby, in his Natural Hiſtory of Carolina; where he ſays, that this tree grows in places where the water commonly covers the ſurface of the ground three or four feet, ſo that it may be a very great improvement to our boggy ſoils. This tree, caſting its leaves in winter, does not ſo well ſuit with plantations of Evergreens at that ſeaſon; though, in ſummer, when there is the greateſt pleaſure in walking among plantations of trees, it hath ſo much the appearance of an Evergreen, as to paſs for ſuch. It may alſo be propagated by cuttings, which ſhould be planted in a bed of moiſt earth in the ſpring before they begin to ſhoot.

The third ſort is at preſent pretty rare in the Engliſh gardens, though of late years there have been many plants raiſed here; but this ſort is not quite ſo hardy, I fear, as the common Cypreſs, for the plants are frequently killed, or greatly injured in ſevere winters; and in the hard froſt in 1740, there was a large tree of this kind entirely killed in the gardens of his Grace the Duke of Richmond, at Goodwood in Suſſex, which had been growing there ſeveral years; and in the year 1762, many large trees were killed. There are great plenty of theſe trees growing at a place called Buſaco, near Cœmbra in Portugal, where this tree is called the Cedar of Buſaco; and there it grows to be a timber tree, ſo that from thence the ſeeds may be eaſily procured.

This tree grows naturally at Goa, from whence it was firſt brought to Portugal, where it has ſucceeded, and been propagated; formerly there were ſome trees of this ſort growing in the Biſhop of London's garden at Fulham, where it paſſed under the title of Cedar of Goa, by which it was ſent from thence to the Leyden garden with that name.

The fifth ſort is a native of North America, where it grows to a conſiderable height, and affords an uſeful timber to the inhabitants for many purpoſes. This ſort is extremely worth cultivating in England; for as it grows in a much colder country, there is no danger of its thriving well in the open air in England; and being an Evergreen of regular growth, will add to the variety of wilderneſs quarters, or other plantations of Evergreen Trees.

This ſort is propagated by ſeeds, which ſhould be ſown in the ſpring in boxes or tubs filled with light freſh earth, and placed where they may enjoy the morning ſun till eleven or twelve o'clock. In dry weather they ſhould be duly watered, and conſtantly kept clear from weeds. In this ſituation they may remain till Michaelmas, when they ſhould be removed to a warmer place; for the plants ſeldom appear till the following ſpring, ſo that it will be proper to place the boxes or tubs near a ſouth wall, pale, or hedge, during the winter ſeaſon; leſt, by being too much ſhaded, the wet of the winter ſeaſon ſhould rot

the ſeeds. In the ſpring following, if theſe tubs or boxes are placed on a moderate hot-bed, it will bring up the plants very ſoon, and greatly forward their growth; but as the ſpring advances, they ſhould be inured to bear the open air by degrees; and in May they muſt be taken out of the hot-bed, and placed in a ſheltered ſituation, where they may enjoy the morning ſun, being careful to keep them clear from weeds, as alſo to water them duly in dry weather. The following winter it will be proper to remove the tubs near a ſouth wall or pale, for the plants being very young, are ſometimes tenderer than they will be afterward. Toward the latter end of March, or the beginning of April, juſt before the plants begin to ſhoot, they ſhould be carefully taken up out of the boxes; and having prepared a bed or two (according to the quantity of plants raiſed) of freſh earth in a ſheltered ſituation, the plants ſhould be planted therein in rows about eighteen inches aſunder, and about a foot diſtance plant from plant in the rows. This work ſhould be done in cloudy weather, when there is rain; for in dry weather, when eaſterly winds commonly blow at this ſeaſon, it will be very dangerous to tranſplant theſe plants; ſo that it had better be deferred a fortnight longer, till there is an alteration of the weather, than hazard the plants. When the plants are planted, they ſhould be watered to ſettle the earth to their roots; and then the ſurface of the ground ſhould be covered with mulch, to prevent the ſun and wind from penetrating to the roots of the plants; for nothing is more injurious to theſe plants, than to have their fibres dried when they are tranſplanted; therefore the plants ſhould not be taken out of the tubs till you are ready to place them in the ground, for they will not bear to lie out of the ground any time without great danger.

The branches of this tree are garniſhed with flat evergreen leaves, reſembling thoſe of the Arbor Vitæ; and the cones are no larger than the berries of the Juniper, from which they are not eaſily diſtinguiſhed at a little diſtance; but upon cloſely viewing, they are perfect cones, having many cells like thoſe of the common Cypreſs. If theſe trees are planted in a moiſt ſtrong ſoil, they make very great progreſs, and may, in ſuch ſituations, become profitable for timber; but however this tree may ſucceed for timber, yet it will be a great ornament to large plantations of evergreen trees, eſpecially in ſuch places where there is naturally a proper ſoil for them; becauſe, in ſuch ſituations, there are not many ſorts of Evergreen Trees which thrive well, eſpecially in cold places, and by increaſing the number of ſorts of theſe Evergreens, we add to the beauty of our gardens and plantations.

The third ſort ſends forth its branches almoſt horizontally, ſo that they extend to a great diſtance every way, and the trees are generally furniſhed with branches from the ground upward; but as theſe grow without much order, the trees have a very different appearance from all the other ſorts. This grows to be a large timber tree in Portugal, but the largeſt tree which I have ſeen in England, has not been above fifteen feet high, and the ſide branches of this were extended more than eight feet on every ſide from the ſtem. This ſort may be propagated from ſeeds in the ſame manner as the common Cypreſs, and the plants ſhould be treated in the ſame manner as hath been directed for them, with this difference only, that it will be proper to cover theſe plants during the two firſt winters after they are come up, eſpecially if the froſt ſhould be ſevere, which might deſtroy them, if they are expoſed to it while they are young. This ſort may alſo be propagated by cuttings, which, if planted in autumn, and ſcreened in winter, they will take root; but it is generally two years before they will be rooted enough to tranſplant, nor will the plants ſo raiſed thrive ſo faſt as the ſeedlings; therefore, when the ſeeds can be obtained, that is the beſt method to propagate this tree. The American deciduous Cypreſs may alſo be propagated by cuttings, as I have ſeveral times tried; ſo that when ſeeds cannot be had, this method may be practiſed ſucceſsfully. I ſuppoſe the common ſort will alſo take from cuttings; but this I have not experienced, ſo cannot recommend it to practice.

Theſe trees are ſo very ornamental to gardens, that no large garden can be compleat without many of them; and it is to theſe trees that the Italian villas owe a great ſhare of their beauty, for there is no tree ſo proper to place near buildings; the pyramidal upright growth of their branches affords a pictureſque appearance, and obſtructs not the view of the building, and the dark green of their leaves make a fine contraſt with the white of the building; ſo that wherever there are temples or other buildings erected in gardens, there is no ſort of tree ſo proper to place near them as theſe. In all the landſchapes of Italian villas, we ſee many Cypreſs-trees repreſented, which have a very agreeable effect in the picture; and the trees, when rightly diſpoſed in a garden, afford a no leſs agreeable proſpect.

The ſeeds of the ſixth ſort were ſent me from the Cape of Good Hope, where the trees grow naturally, and by the account which I received with the ſeeds, the cones of the tree are black when ripe. The young plants which I have raiſed from theſe ſeeds have looſe ſpreading branches, which are cloſely garniſhed with narrow ſtrait leaves, which come out oppoſite, and are alternately croſſing each other; theſe are near one inch long, and of a light green colour; they continue in verdure all the year. Theſe plants being yo g, are too tender to thrive in the open air in Englan as yet; but when they have obtained more ſtrength, it is very probable they may do well in warm ſituations. I had two of theſe plants growing in the full ground, which were killed in the winter 1756. But thoſe which were placed under a frame, where there were no covering of glaſs, and only wooden ſhutters, were not injured by the cold, though the earth of the pots was frequently hard frozen.

CURCUMA. Lin. Gen. Plant. 6. Cannacorus. Tourn. Inſt. R. H. 367. Turmerick.

The CHARACTERS are,

The flowers have each ſeveral ſpathæ, which are ſingle and drop off; the flower hath one petal with a narrow tube, which is cut at the brim into three ſegments; it hath an oval-pointed nectarium of one leaf, which is inſerted in the ſinus of the largeſt ſegment of the petal; it hath five ſtamina, four of which are barren, and one fruitful, which is ſituated within the nectarium, and hath the appearance of a petal, having a bifid point, to which the ſummit adheres. It hath a roundiſh germen ſituated under the flower, ſupporting a ſtyle the length of the ſtamina, crowned by a ſingle ſtigma. The germen afterward becomes a roundiſh capſule, having three cells, which are filled with roundiſh ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's firſt claſs, intitled Monandria Monogynia, the flower having one ſtamina and one ſtyle.

The SPECIES are,

1. CURCUMA (*Rotunda*) foliis lanceolato-ovatis, nervis lateralibus rariſſimis. Lin. Sp. Plant. 2. *Curcuma with ſpear-ſhaped oval leaves, having very few nerves on the ſides.* Curcuma radice rotundâ. C. B. *Turmerick with a round root.*
2. CURCUMA (*Longa*) foliis lanceolatis nervis lateralibus numeroſiſſimis. Lin. Sp. Plant. 2. *Curcuma with ſpear-ſhaped leaves, having many lateral veins.* Curcuma radice longâ. H. L. 288. *Turmerick with a long root.*

The firſt ſort hath a fleſhy jointed root ſomewhat like that of Ginger, but rounder, which ſends up ſeveral ſpear-ſhaped oval leaves, that riſe upwards of a foot high; theſe have one longitudinal midrib, and a few tranſverſe nerves running from the midrib to the ſides; they are of a ſea-green colour; from between theſe ariſe the flower-ſtalk, ſupporting a looſe ſpike of flowers of a pale yellowiſh colour, incloſed in ſeveral different ſpathæ or ſheaths, which drop off. Theſe flowers are never ſucceeded by ſeeds in the gardens here.

The

The ſecond ſort hath long fleſhy roots, of a deep yellow colour, which ſpread under the ſurface of the ground like thoſe of Ginger; they are about the thickneſs of a man's finger, having many round knotty circles, from which ariſe four or five large ſpear-ſhaped leaves, ſtanding upon long foot-ſtalks; they have a thick longitudinal midrib, from which a numerous quantity of veins are extended to the ſides; theſe leaves are of a glaucous or ſea-green colour. The flowers grow in looſe ſcaly ſpikes on the top of the foot-ſtalks, which ariſe from the larger knobs of the roots, and grow about a foot high; they are of a yellowiſh red colour, and ſhaped ſomewhat like thoſe of the Indian Reed.

Theſe plants grow naturally in India, from whence the roots are brought to Europe for uſe. They are very tender, ſo will not live in this country, unleſs they are placed in a warm ſtove. As they do not produce ſeeds in England, they are only propagated by parting their roots: the beſt time for removing and parting theſe roots is in the ſpring, before they put out new leaves; for the leaves of theſe plants decay in autumn, and the roots remain inactive till the ſpring, when they put out freſh leaves. The roots ſhould be planted in rich kitchen-garden earth, and the pots ſhould be conſtantly kept plunged in a bark-bed in the ſtove. In the ſummer ſeaſon, when the plants are in a growing ſtate, they will require to be frequently refreſhed with water, but it ſhould not be given to them in large quantities; they ſhould alſo have a large ſhare of air admitted to them in warm weather. When the leaves are decayed, they ſhould have very little wet, and muſt be kept in a warm temperature of air, otherwiſe they will periſh. Theſe plants uſually flower in Auguſt, but it is only the ſtrong roots which flower, ſo they muſt not be parted into ſmall roots, where the flowers are deſired.

CURRAN-TREE. See RIBES.

CURURU. See PAULLINIA.

CUSPIDATED PLANTS [ſo called, of cuſpis, *Lat.* the point of a ſpear] are ſuch plants, the leaves of which are pointed like a ſpear.

CUSTARD-APPLE. See ANNONA.

CYANELLA. Royen.

The CHARACTERS are,

The flower has no empalement; it hath ſix oblong, concave, ſpreading petals, which join at their baſe, the three lower hanging downward, with ſix ſhort ſpreading ſtamina, terminated by oblong erect ſummits, and a three-cornered obtuſe germen, ſupporting a ſlender ſtyle the length of the ſtamina, having an acute ſtigma. The germen afterward becomes a roundiſh capſule, having three furrows, with three cells, incloſing many oblong ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, intitled Hexandria Monogynia, the flower having ſix ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

CYANELLA (*Capenſis*). Lin. Sp. 443. Cape Cyanella.

This plant grows naturally at the Cape of Good Hope. The root is ſhaped like thoſe of the Spring Crocus; the leaves are long, narrow, and have a ſulcus on their upper ſide; the foot-ſtalk of the flower ariſes immediately from the root, ſupporting one flower with ſix petals, of a fine blue colour, which appears in May, but the flowers have not been ſucceeded by ſeeds as yet in England.

It is too tender to thrive in the full ground in this country, therefore the roots ſhould be planted in pots filled with light earth; and in winter muſt be placed in a frame, and treated in the ſame manner as is directed for Ixia, with which the plant will thrive and produce flowers annually.

CYANUS. See CENTAURIA.

CYCAS, the Sago-tree.

There are ſeveral ſmall plants of this ſort in the Engliſh gardens, but from theſe no characters of the tree can be drawn; nor are there any juſt accounts of theſe to be met with in the ſeveral authors who have figured and deſcribed the tree.

We know but one SPECIES of it at preſent, viz.

CYCAS (*Circinalis*) frondibus pinnatis circinalibus, foliolis linearibus planis. Lin. Sp. 1658. *Sago-tree with full branches, whoſe wings are placed circularly, and the ſmall leaves are plain.* Arbor Zagoe Amboinenſis. Seb. Theſ. 1. p. 39.

This tree has been ranged in the tribe of Palms, to which it has great affinity, eſpecially by its outer appearance the branches and trunk having the ſame ſtructure.

This tree requires to be plunged into tanners bark in a ſtove, which ſhould be kept up full to temperate heat in winter; but in ſummer ſhould be much warmer, when it ſhould be frequently refreſhed with water during hot weather, but in autumn and winter it ſhould be given ſparingly.

Moſt of the plants of this kind now in the Engliſh gardens, have been communicated to the poſſeſſors by Richard Warner, Eſq; of Woodford, in Eſſex, who received a tree of this ſort, which was brought from India by the late Captain Hutchenſon; but his ſhip being attacked by the French near home, the head of the tree was ſhot off, but the ſtem being preſerved, put out ſeveral heads, which being taken off, produced ſo many plants.

CYCLAMEN. Lin. Gen. Plant. 184. Tourn. Inſt. R. H. 154. tab. 68. Cyclamen; in French, *Pain de Pourceau.* [Κυκλάμινος, of Κύκλος, *Gr.* a circle, becauſe the root of this plant is orbicular; it is called Sowbread, becauſe the root is round like a loaf, and the ſows eat it]. Sowbread.

The CHARACTERS are,

The flower hath a roundiſh permanent empalement of one leaf, divided into five parts at the top. It hath one petal with a globular tube, which is much larger than the empalement; the upper part is divided into five large ſegments, which are reflexed; it hath five ſmall ſtamina ſituated within the tube of the petal, terminated by acute ſummits, which are connected in the neck of the tube. It hath a roundiſh germen, ſupporting a ſlender ſtyle, which is longer than the ſtamina, and crowned by an acute ſtigma. The germen afterward becomes a globular fruit with one cell, opening in five parts at the top, incloſing many oval angular ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. CYCLAMEN (*Europæum*) foliis haſtato-cordatis angulatis. *Cyclamen with ſpear-pointed heart-ſhaped leaves, which are angular.* Cyclamen hederæ folio. C. B. P. 306. *Sowbread with an Ivy leaf.*
2. CYCLAMEN (*Purpuraſcens*) foliis orbiculato-cordatis, infernè purpuraſcentibus. *Cyclamen with round heart-ſhaped leaves, purple on their under ſide.* Cyclamen orbiculato folio infernè purpuraſcente. C. B. P. 308. *Round-leaved Sowbread with a purple under ſide.*
3. CYCLAMEN (*Perſicum*) foliis cordatis ſerratis. *Cyclamen with ſawed heart-ſhaped leaves; or Perſian Cyclamen.*
4. CYCLAMEN (*Vernale*) foliis cordatis anguloſis integris. *Cyclamen with heart-ſhaped angular leaves which are entire.* Cyclamen hyeme & vere florens folio anguloſo amplo, flore albo, baſi purpurea, Perſicum dictum. H. R. Par.
5. CYCLAMEN (*Orbiculatum*) radice inæquali, foliis orbiculatis. *Cyclamen with an unequal root and round leaves.* Cyclamen radice caſtaneæ magnitudinis. C. B. P. 308.
6. CYCLAMEN (*Coum*) foliis orbiculatis planis, pediculis brevibus floribus minoribus. *Sowbread with orbicular plain leaves, ſhorter foot-ſtalks and ſmaller flowers.* Cyclamen Hyemale, orbiculatis foliis infernè rubentibus, purpuraſcente flore Coum Herbariorum. H. R. Par.

The firſt ſort is the moſt common in the Engliſh gardens. This grows naturally in Auſtria, Italy, and other parts of Europe, ſo will thrive in the open air in England, and is never killed by the froſt. It hath a large, orbicular, compreſſed root, from which ariſe a great number of angular heart-ſhaped leaves, upon

ſingle foot-ſtalks, which are ſix or ſeven inches long; theſe leaves are marked with black in their middle; the flowers appear before the leaves, riſing immediately from the root, with long fleſhy foot-ſtalks; they appear in Auguſt and September, and ſoon after the leaves come out, continue growing all the winter and ſpring till May, when they begin to decay, and in June they are entirely dried up. After the flowers are fallen, the foot-ſtalks twiſt up like a ſcrew, incloſing the germen in the center, and lay down cloſe to the ſurface of the ground between the leaves, which ſerve as a protection to the ſeed. This germen becomes a round fleſhy ſeed-veſſel with one cell, incloſing ſeveral angular ſeeds. The ſeeds ripen in June, and ſhould be ſown in Auguſt. There are two varieties of this, one with a white and the other with a purpliſh flower, which appear at the ſame time.

The ſecond ſort flowers in autumn: this is at preſent very rare in England; the leaves of this ſort are large, orbicular, and heart-ſhaped at their baſe, and of a purple colour on their under ſide; the leaves and flowers of this come up from the root at the ſame time; the flowers are of a purpliſh colour, and their bottoms are of a deep red. It flowers late in the autumn, and requires protection from the froſt in winter.

The third ſort hath ſtiff heart-ſhaped leaves which are ſawed on their edges; theſe have ſtrong fleſhy foot-ſtalks near ſix inches long, of a purple colour, as are alſo the veins of the leaves on their under ſide, but the upper ſide is veined and marbled with white. The flowers riſe with ſingle foot-ſtalks from the root; theſe are pure white with a bright purple bottom; the petal is divided into nine ſegments to the bottom, which are twiſted and reflexed backward like the other ſorts. This flowers in March and April, and the ſeeds ripen in Auguſt.

The fourth ſort is commonly called the Perſian Cyclamen. This hath large, angular, heart-ſhaped leaves, whoſe edges are entire; they are veined and marbled with white on the upper ſide, and ſtand upon pretty long foot-ſtalks; the flowers are large, of a pale purple colour, with a bright red or purple bottom. Theſe appear in March and April, and the ſeeds ripen in Auguſt.

The fifth ſort hath a ſmall irregular root not larger than a Nutmeg; the leaves are orbicular and ſmall; the flowers are of a fleſh colour, ſmall, and have purple bortoms. They appear in the autumn, but rarely produce ſeeds in England.

The ſixth ſort is not ſo tender as the four laſt mentioned, ſo may be planted in warm borders, where, if they are covered in hard froſt, they will thrive and flower very well. This hath plain orbicular leaves, which have ſhorter and weaker foot-ſtalks than either of the other; their under ſides are very red in the beginning of winter, but that colour goes off in the ſpring; their upper ſides are ſmooth, of a lucid green, and ſpread open flat; whereas the other ſorts are hollowed, and reflexed at their baſe. The flowers are of a very bright purple colour, and appear in the middle of winter, at a time when there are few other flowers, which renders the plants more valuable. The ſeeds of this ſort ripen in the end of June.

There are ſeveral other varieties of this plant, which chiefly differ in the colour of their flowers, particularly among the Perſian kind, of which there is one with an entire white flower, which ſmells very ſweet; but as theſe are accidental variations, I have not enumerated them here, thoſe which are here mentioned being undoubtedly diſtinct ſpecies; for I have many years propagated them from ſeeds, and have not found them vary, nor have I heard that any other perſon has obſerved either of them alter farther than varying of their colours. Though Dr. Linnæus ſuppoſes them but one ſpecies, it is well known that the firſt ſort will endure the greateſt froſt in the open air, whereas all the Perſian ſorts are tender, and require ſhelter in winter.

All the ſorts are propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, in boxes or pots filled with light kitchen-garden earth, mixed with a little ſand, and covered about half an inch deep, placing them where they may have only the morning ſun till the beginning of September, when they may be removed to a warmer expoſure. Thoſe of the firſt ſort may be plunged into the ground cloſe to a ſouth wall, a pale, or Reed hedge, in October, where, if it ſhould be very ſevere froſt, it will be proper to cover them either with mats or Peaſe-haulm, but in common winters they will not require any covering. The pots or tubs in which the Perſian kinds are ſown, ſhould then be placed under a common hot-bed frame, where they may be protected from froſt and hard rains, but in mild weather the glaſſes may be taken off every day to admit freſh air to them. The firſt ſort will come up about Chriſtmas, if the ſeeds were ſown in Auguſt, and their leaves will continue green till May; and thoſe of the Perſian kinds will come up early in the ſpring, and continue green till June, when they will begin to decay; then they ſhould be removed to an eaſt aſpect, where they will have only the morning ſun, in which ſituation they may remain till the middle of Auguſt; during which time they ſhould have very little water, for then the roots are in an inactive ſtate, when much wet will rot them. The pots and tubs in which they are ſown, muſt be conſtantly kept clean from weeds; for if the weeds are permitted to grow, their roots will cloſely entangle with thoſe of the Cyclamen; ſo that in pulling out the weeds, the other roots will be drawn out with them. In the beginning of October, there ſhould be ſome freſh earth ſpread over the tubs or pots, which ſhould be removed again into ſhelter, in the ſame manner as before; and the following ſummer they muſt be managed alſo in the ſame way till their leaves decay, when they ſhould be carefully taken up, and thoſe of the firſt ſort placed in a warm border at three or four inches diſtance, but the other ſorts muſt be planted in pots to be ſheltered in winter.

The third, fourth, and fifth ſorts, are more impatient of cold and wet than the other three; theſe muſt conſtantly be preſerved in pots filled with ſandy light earth, and houſed in winter, but ſhould be placed near the glaſſes, where they may enjoy as much free open air as poſſible, when the weather will permit; for if they are crowded under other plants, and are kept too cloſe, they are very ſubject to mould and rot; nor ſhould they have much water in winter, which is alſo very injurious to them, but whenever they want water, it ſhould be given them ſparingly. In ſummer theſe plants may be expoſed to the open air, when their green leaves will decay; at which time you ſhould remove them to a place, where they may have the morning ſun until eleven o'clock; but during the time that the roots are deſtitute of leaves, they ſhould have very little water given them, becauſe at that ſeaſon they are not capable of diſcharging the moiſture. This is alſo the proper ſeaſon to tranſplant the roots, or to freſh earth them; and as the autumn comes on, that the heat decreaſes, they may be removed into places more expoſed to the ſun, where they may remain until October before they need be houſed.

Toward Chriſtmas, if the roots are in good health, the ſixth ſort will begin to flower, and continue producing freſh flowers till the middle of February, and theſe will be ſucceeded by the Perſian ſorts, which continue till May; but if you intend to have any ſeeds, you muſt let the pots be placed ſo as to receive a great ſhare of freſh air, for if their flowers are drawn up in the houſe, they ſeldom produce any ſeeds. Theſe ſeeds are ripe about July, when they ſhould be immediately ſown in pots or caſes of good light undunged earth, which ſhould be ſheltered in winter under a frame, and expoſed in ſummer in the ſame manner as is directed for the older roots, obſerving to remove them into pots at a wider diſtance when they are two years old; and ſo from time to time, as their roots increaſe in bulk, you muſt give them more room;

room; and in about four or five years time they will begin to flower, when you ſhould let each root have a ſeparate pot, which at firſt may be ſmall, but when the roots are grown large, they muſt be put into larger pots.

Theſe ſorts have been planted under warm walls in the full ground, where, in mild winters they have done very well, but in ſevere froſt all thoſe roots have been deſtroyed; therefore, whenever theſe roots are planted in an open border, there ſhould be common hot-bed frames placed over them in winter, that in bad weather they may be covered to protect them from froſt: and where they are thus managed, the plants will produce more flowers, which will be much fairer than what are produced from the roots in the pots, and from theſe there may always be good ſeeds expected: therefore ſuch perſons who are curious in flowers, ſhould have a border framed over on purpoſe for theſe, the Guernſey and Belladonna Lilies, with ſome other of the curious bulbous-rooted flowers; in which border there may be many of theſe curious flowers cultivated, to more advantage than in any other method now practiſed.

CYDONIA. Tourn. Inſt. R. H. 632. tab. 405. Pyrus. L in. Gen. Plant. 550. [ſo called from Cydon, a town of Crete, famous for this fruit.] The Quince-tree.

The CHARACTERS are,

The flower is compoſed of five large, roundiſh, concave petals, which are inſerted in the permanent empalement of one leaf. The germen is ſituated under the flower, and ſupports five ſlender ſtyles, crowned by ſingle ſtigmas; theſe are attended by near twenty ſtamina, which are inſerted in the empalement, but are not ſo long as the petals; the germen afterward becomes a pyramidal or roundiſh fruit, which is fleſhy, and divided into five cells, in which are lodged ſeveral hard kernels or ſeeds.

This genus of plants is ranged in the eighth ſection of Tournefort's twenty-firſt claſs, which includes the trees and ſhrubs with a Roſe flower, whoſe empalement becomes a fruit pregnant with hard ſeeds. Dr. Linnæus has joined this genus, and alſo the Apple to the Pear, making them only ſpecies of the ſame genus, to which the Quince is nearly allied by its characters, which the Apple is not. However, though the joining of the Quince to the Pear may be allowed in a ſyſtem of botany, yet in a book of gardening, it may not be quite ſo proper, therefore I have choſen to continue them under their former well known titles.

The SPECIES are,

1. CYDONIA (*Oblonga*) foliis oblongo-ovatis ſubtus tomentoſis, pomis oblongis baſi productis. *Quince-tree with oblong oval leaves, woolly on their under ſide, and an oblong fruit lengthened at the baſe.* Cydonia fructu oblongo læviori. Tourn. Inſt. R. H. 632.
2. CYDONIA (*Maliforma*) foliis ovatis, ſubtus tomentoſis, pomis rotundioribus. *Quince-tree with oval leaves, woolly on their under ſide, and a rounder fruit.* Cydonia fructu breviore & rotundiore. Tourn. Inſt. R. H. 633. *Commonly called the Apple Quince.*
3. CYDONIA (*Luſitanica*) foliis obverſè-ovatis ſubtus tomentoſis. *Quince-tree with obverſe oval leaves, woolly on their under ſide.* Cydonia latifolia Luſitanica. Tourn. Inſt. 633. *Broad-leaved Portugal Quince.*

There are ſome other varieties of this fruit which are propagated in fruit-gardens, and in the nurſeries for ſale, one of which is a ſoft eatable fruit; there is another with a very aſtringent fruit, and a third with a very ſmall fruit, cottony all over, and is ſcarce worth keeping: theſe I ſuppoſe to be ſeminal variations, but the three ſorts before enumerated, I take to be diſtinct ſpecies, having propagated them by ſeeds, and have not found them to vary.

The Portugal Quince is the moſt valuable, the pulp of it turning to a fine purple when ſtewed or baked, and becomes much ſofter and leſs auſtere than the others, ſo is much better for making of marmalade.

They are all eaſily propagated either by layers, ſuckers, or cuttings, which muſt be planted in a moiſt ſoil. Thoſe raiſed from ſuckers are ſeldom ſo well rooted as thoſe which are obtained from cuttings or layers, and are ſubject to produce ſuckers again in greater plenty, which is not ſo proper for fruit-bearing trees. The cuttings ſhould be planted early in the autumn, and in very dry weather muſt be often watered to encourage their rooting. The ſecond year after they ſhould be removed into a nurſery at three feet diſtance row from row, and one foot aſunder in the rows, where they muſt be managed as was directed for Apples. In two or three years time theſe trees will be fit to tranſplant, where they are to remain for good, which ſhould be either by the ſide of a ditch, river, or in ſome other moiſt place, where they will produce a greater plenty, and much larger fruit than in a dry ſoil; though thoſe in a dry ſoil will be better taſted, and earlier ripe. Theſe trees require very little pruning; the chief thing to be obſerved is, to keep their ſtems clear from ſuckers, and cut off ſuch branches as croſs each other; likewiſe all upright luxuriant ſhoots from the middle of the tree ſhould be taken entirely out, that the head may not be too much crowded with wood, which is of ill conſequence to all ſorts of fruit-trees. Theſe ſorts may alſo be propagated by budding or grafting upon ſtocks raiſed by cuttings, ſo that the beſt ſorts may be cultivated in greater plenty this way, than by any other method; and theſe trees will bear fruit much ſooner, and be more fruitful than thoſe which come from ſuckers or layers.

Theſe are alſo in great eſteem for ſtocks to graft and bud Pears on, which for ſummer and autumn fruits are a great improvement to them, eſpecially thoſe deſigned for walls and eſpaliers; for the trees upon theſe ſtocks do not ſhoot ſo vigorouſly as thoſe upon free ſtocks, and therefore may be kept in leſs compaſs, and are ſooner diſpoſed to bear fruit: but hard winter fruits do not ſucceed ſo well upon theſe ſtocks, their fruit being very ſubject to crack, and are commonly ſtony, eſpecially all the breaking Pears; therefore theſe ſtocks are only proper for the melting Pears, and for a moiſt ſoil. The beſt ſtocks are thoſe which are raiſed from cuttings or layers.

As the Pear will take upon the Quince by grafting or budding, and ſo vice verſâ, we may conclude there is a near alliance between them; but as neither of theſe will take upon the Apple, nor that upon either of theſe, ſo we ſhould ſeparate them under different genera, as will be further mentioned under the article MALUS.

CYNANCHUM. Lin. Gen. Plant. 268. Apocynum. Tourn. Inſt. R. H. 91. Periploca. Tourn. Inſt. 93. tab. 22.

The CHARACTERS are,

The flower hath one petal; it hath ſcarce any tube, but is ſpread open, plain, and divided into five parts; this hath a ſmall, erect, permanent empalement of one leaf, divided into five parts; the nectarium, which is ſituated in the center of the flower, is erect, cylindrical, and the length of the petal. It hath five ſtamina which are parallel to the nectarium, and of the ſame length, terminated by ſummits which reach to the mouth of the petal. It hath an oblong bifid germen, with ſcarce any ſtyle, crowned by two obtuſe ſtigmas; the empalement becomes a capſule with two oblong pointed leaves, having a cell which opens longitudinally, and is filled with ſeeds lying over each other imbricatim, and are crowned with long down.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. CYNANCHUM (*Acutum*) caule volubili herbaceo, foliis cordato-oblongis glabris. Hort. Cliff. 79. *Cynanchum with a twining herbaceous ſtalk, and oblong, ſmooth, heart-ſhaped leaves.* Periploca Monſpeliaca foliis acutioribus. Tourn. Inſt. 93. *Commonly called Montpelier Scammony.*
2. CYNANCHUM (*Monſpeliacum*) caule volubili herbaceo, foliis reniformi-cordatis acutis. Hort. Cliff. 79. *Cynanchum with a twining herbaceous ſtalk, and kidney, heart-ſhaped, pointed leaves.* Periploca Monſpeliaca foliis

foliis rotundioribus. Tourn. Inſt. R. H. 93. *Round-leaved Montpelier Scammony.*

3. CYNANCHUM (*Suberoſum*) caule volubili infernè ſuberoſo fiſſo, foliis cordatis acuminatis. Hort. Cliff. 79. *Cynanchum with a twining fungous ſtalk, having fiſſures on the under ſide, and heart-ſhaped pointed leaves.* Periploca Carolinienſis, flore minore ſtellato. Hort. Elth. 300.

4. CYNANCHUM (*Hirtum*) caule volubili fruticoſo, infernè ſuberoſo fiſſo, foliis ovato-cordatis. Hort. Cliff. 79. *Cynanchum with a ſhrubby twining ſtalk, whoſe lower part is fungous, having fiſſures, and oval heart-ſhaped leaves.* Periploca ſcandens, folio citri, fructu maximo. Plum. Cat. 2.

5. CYNANCHUM (*Erectum*) caule erecto divaricato, foliis cordatis glabris. Hort. Cliff. 79. *Cynanchum with an upright divaricated ſtalk, and heart-ſhaped ſmooth leaves.* Apocynum folio ſubrotundo. C. B. P. 302.

6. CYNANCHUM (*Aſperum*) caule volubili fruticoſo, foliis cordatis acutis aſperis, floribus lateralibus. *Cynanchum with a twining ſhrubby ſtalk, heart-ſhaped, pointed, rough leaves, and flowers growing from the ſides of the ſtalks.* Apocynum ſcandens foliis cordatis aſperis, floribus amplis patulis luteis. Houſt. MSS.

The firſt and ſecond ſorts grow naturally about Montpelier; theſe have perennial creeping roots, but annual ſtalks, which decay to the root every autumn, and riſe afreſh in the ſpring; theſe ſtalks twiſt themſelves like Hops, round whatever plants are near them, and riſe to the height of ſix or eight feet; the firſt of theſe is garniſhed with oblong, heart-ſhaped, ſmooth leaves, ending in acute points, and are placed by pairs oppoſite on long foot-ſtalks; the flowers come out in ſmall bunches from the wings of the leaves; they are of a dirty white colour, and divided into five acute ſegments, which ſpread open in form of a ſtar. Theſe appear in June and July, but are not ſucceeded by any ſeed-veſſels in England, which may be occaſioned by their roots creeping ſo far under ground; for moſt of thoſe plants which propagate themſelves ſo much by their roots, become barren of ſeeds, eſpecially if their roots have full liberty to extend.

The ſecond ſort differs from the firſt in the ſhape of its leaves, which are broader and rounder at their baſe. The roots of this ſort are very thick, running deep into the ground, and extend themſelves far on every ſide; ſo that where this plant hath got poſſeſſion of the ground it is not eaſily extirpated, for every piece of the root will ſhoot, which may happen to be left in the ground. Both theſe plants abound with a milky juice like the Spurge, which iſſues out wherever they are broken; and this milky juice when concreted, has been frequently ſold for ſcammony.

Theſe plants propagate too faſt by their creeping roots when they are admitted into gardens, ſo few people care to have them: the roots may be tranſplanted any time after their ſtalks decay, till they begin to ſhoot in the ſpring.

The third ſort grows naturally in Carolina, from whence the ſeeds were brought to England; this is a perennial plant with twining hairy ſtalks, which, if ſupported, will riſe ſix or ſeven feet high; the lower part of the ſtalks are covered with a thick fungous bark, ſomewhat like cork, which is full of fiſſures; theſe ſtalks are ſlender, and garniſhed at each joint with two oblong, heart-ſhaped, pointed leaves, ſtanding on long hairy foot-ſtalks. The flowers are produced in ſmall bunches at the wings of the leaves, theſe are ſtar-ſhaped and green when they firſt appear, but afterward fade to a worn-out purple colour. They appear in July and Auguſt, but are not ſucceeded by ſeeds in England.

This plant will live in the open air in England, if it is planted in a dry ſoil and warm ſituation. It may be propagated by laying down ſome of the young ſhoots about Midſummer, which, if they are now and then refreſhed with water, will put out roots, ſo may be tranſplanted in the autumn, where they are deſigned to remain. The roots of this plant ſhould be covered in winter with ſome rotten tan to keep out the froſt, otherwiſe in ſevere winters they are liable to be deſtroyed.

The fourth ſort grows naturally in Jamaica, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this riſes with a twining ſtalk to the height of twenty feet or upward, provided it hath ſupport; the lower part of the ſtalks are covered with a thick fungous bark, full of fiſſures, which gape open; the leaves are oblong and ſmooth, and placed by pairs oppoſite, ſtanding on long foot-ſtalks: the flowers are produced from the wings of the leaves in ſmall bunches, they are ſtar-ſhaped, and are of a yellowiſh green colour, but are not ſucceeded by pods in England.

This ſort is tender, ſo will not thrive in this country unleſs it is placed in a warm ſtove, and requires the ſame treatment as other tender plants from the ſame country; and as it abounds with a milky juice, ſo the plants muſt have little water in winter. This may be propagated by laying down of the young ſhoots, which in three or four months will put out roots, and may then be tranſplanted into pots filled with light ſandy earth, and plunged into the tan-bed in the bark-ſtove, where the plants ſhould continue all the year.

The fifth ſort grows naturally in Syria; this is a perennial plant, which riſes with ſlender upright ſtalks about three feet high, garniſhed with broad, ſmooth, heart-ſhaped leaves ending in points, placed oppoſite; the flowers come out from the wings of the leaves in ſmall bunches, ſtanding on branching foot-ſtalks; theſe are ſmall and white, greatly reſembling thoſe of the common white Aſclepias, or Swallow-wort, and are ſucceeded by oblong taper pods, filled with flat ſeeds crowned with down, but theſe rarely ripen in this country.

It is propagated by parting of the root; the beſt time for doing of this or tranſplanting of the roots, is in the ſpring, before they ſhoot: this requires a warm ſituation, otherwiſe it will not live abroad in England.

The ſixth ſort grows naturally at La Vera Cruz in New Spain, from whence the ſeeds were ſent me by the late Dr. Houſtoun; this hath a ſhrubby twining ſtalk, which twiſts about whatever prop is near it, and riſes to the height of twenty feet or upward; the ſtalks are very ſlender, and are armed with ſmall ſtinging hairs, and garniſhed with broad heart-ſhaped leaves, which end in acute points; theſe are placed by pairs at each joint, which are far diſtant, and have ſlender foot-ſtalks; they are covered with rough hairs on their under ſide; the flowers are produced in ſmall cluſters, ſitting cloſe to the ſide of the ſtalks; they are pretty large, yellow, and ſtar-ſhaped, ſpreading open to the bottom; they are ſucceeded by long ſwelling pods, filled with flat ſeeds lying imbricatim, which are crowned with long down.

This ſort is tender, ſo requires the ſame treatment as the fourth, and is propagated the ſame way.

CYNARA. Lin. Gen. Plant. 835. Cinara. Tourn. Inſt. R. H. 442. tab. 254. Artichoke, in French *Artichaut.*

The CHARACTERS are,

It hath a compound flower, made up of many hermaphrodite florets, which are included in one common ſcaly empalement, which is ſwollen in the bottom. The florets are tubulous, equal, and uniform, divided at the top into five narrow ſegments. Theſe have five ſhort hairy ſtamina, terminated by cylindrical ſummits, which have five indentures; at the bottom of each is ſituated an oval germen, ſupporting an oblong ſtyle, crowned by an oblong indented ſtigma. The germen afterward becomes a ſingle, oblong, compreſſed, four-cornered ſeed, crowned with long hairy down.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia æqualis; the plants of this claſs and ſection have only hermaphrodite florets which are fruitful.

The Species are,

1. Cynara (*Scolymus*) foliis ſubſpinoſis, pinnatis indiviſiſque, calycinis ſquamis ovatis. Lin. Sp. Plant. 827. *Artichoke with ſpiny leaves which are winged and undivided, and an oval ſcaly empalement.* Cynara hortenſis aculeata. C. B. P. 383. *The green or French Artichoke.*
2. Cynara (*Hortenſis*) foliis pinnatis inermibus, calycinis ſquamis obtuſis emarginatis. *Artichoke with winged leaves having no ſpines, and obtuſe indented ſcales to the empalement.* Cynara hortenſis foliis non aculeatis. C. B. P. 383. *The Globe Artichoke.*
3. Cynara (*Cardunculus*) foliis ſpinoſis, omnibus pinnatifidis, calycinis ſquamis ovatis. Lin. Sp. Plant. 827. *Cynara with prickly leaves which all end in winged points, and oval ſcales to the empalement.* Cynara ſpinoſa, cujus pediculi eſitantur. C. B. P. 383. *The Cardoon, in French* Chardon.
4. Cynara (*Humilis*) foliis ſpinoſis, pinnatifidis, ſubtus tomentoſis, calycibus ſquamis ſubulatis. Lin. Sp. Plant. 828. *Cynara with winged prickly leaves, woolly on their under ſide, and awl-ſhaped ſcales to the empalement.* Cynara ſylveſtris Bœtica. Cluſ. Cur. Poſt. 15. *Wild Artichoke of Spain.*

The firſt ſort is commonly known here by the title of French Artichoke, being the ſort which is moſt commonly cultivated in France, and is the only kind in Guernſey and Jerſey; the leaves of this ſort are terminated by ſhort ſpines, the head is oval, and the ſcales do not turn inward at the top like thoſe of the Globe Artichoke, the heads are alſo of a green colour; the bottoms of theſe are not near ſo thick of fleſh as thoſe of the Globe, and they have a perfumed taſte, which to many perſons is very diſagreeable; ſo that it is ſeldom cultivated in the gardens near London, where the Globe or red Artichoke is the only ſort in eſteem. The leaves of this are not prickly, the head is globular, a little compreſſed at the top, the ſcales lie cloſe over each other, and their ends turn inward, ſo as to cloſely cover the middle.

The culture of theſe having been fully treated under the article Artichoke, the reader is deſired to turn to that, to avoid repetition.

The Chardon, or Cardoon, is propagated in the kitchen gardens to ſupply the markets; this is annually raiſed from ſeeds, which ſhould be ſown upon a bed of light earth in March; and when the plants come up, they ſhould be thinned where they are too cloſe; and if the plants are wanted, thoſe which are drawn out may be tranſplanted into a bed at about three or four inches diſtance, where they ſhould remain till they are tranſplanted out for good. Theſe young plants muſt be kept clean from weeds, and in the beginning of June they muſt be tranſplanted out, on a moiſt rich ſpot of ground at about four feet aſunder every way; the ground ſhould be well dug before they are planted, and the plants ſhould be well watered until they have taken new root, after which the ground muſt be kept very clean from weeds, to encourage the growth of the plants; and as they advance in height, there ſhould be ſome earth drawn up about each plant; and when they are fully grown, their leaves ſhould be cloſely tied up with a hay-band, and the earth drawn up in hills about each plant, almoſt to their tops, being careful to keep the earth from falling between the leaves, which may occaſion the rotting of the plants. The earth ſhould be ſmoothed over the ſurface that the wet may run off, and not fall into the center of the plants, which will alſo cauſe them to rot; in about eight or ten weeks after the plants have been thus earthed, they will be blanched enough for uſe; ſo that if a ſucceſſion of them are wanted for the table, there ſhould be but few plants earthed up at the ſame time; but once in a fortnight there may be a part of them earthed, in proportion to the quantity deſired.

Toward the middle, or latter end of November, if the froſt ſhould be ſevere, it will be proper to cover the tops of thoſe plants which remain with Peaſe-haulm or ſtraw, to prevent the froſt from penetrating to the tender leaves, which frequently pinches them where there is not this covering, but this ſhould be taken off again in mild weather; if this care is taken, the plants may be preſerved for uſe moſt part of the winter.

If a few of the plants are planted out in a warm ſituation to ſtand for ſeed, they ſhould not be blanched, but only in very hard froſt ſome light litter, or Peaſe-haulm, may be laid round them to keep out froſt, which ſhould be removed in the ſpring, and the ground gently dug between the plants, which will not only deſtroy the weeds, but alſo encourage the roots of the plants to ſhoot out on every ſide, whereby their ſtems will be ſtronger; theſe will flower about the beginning of July, and if the ſeaſon proves dry, their ſeeds will ripen in September; but in cold wet ſeaſons, theſe ſeeds will not come to maturity in England.

The fourth ſort grows naturally in Spain, and alſo on the African ſhore, and is preſerved in gardens for the ſake of variety; this is very like the third ſort, but the ſtems of the leaves are much ſmaller, and do not grow more than half ſo high. The heads of this have ſome reſemblance to thoſe of the French Artichoke, but have no meat, or fleſhy ſubſtance in their bottoms: this may be planted in the ſame manner as the third ſort, at about three or four feet apart, and will require no other treatment, than the keeping them clean from weeds; the ſecond year they will flower, and, if the ſeaſon proves dry, they will ripen their ſeeds in September, and the plants generally decay the following winter, eſpecially if the winter proves ſevere, unleſs they are covered.

CYNOGLOSSUM. Lin. Gen. Plant. 168. Tourn. Inſt. R. H. 139. tab. 57. Omphalodes. Tourn. 140. tab. 59. [Κυνόγλωσσον, of Κυνός, a dog, and Γλῶσσα, *Gr.* the tongue, ſo called becauſe the leaves of this plant reſemble a dog's tongue.] Hounds Tongue, in French, *Langue de Chien.*

The Characters are,

It hath a funnel-ſhaped flower of one leaf, with a long tube, and a ſhort brim, which is ſlightly cut into five parts, and is ſhut up at the chaps; this hath an oblong permanent empalement, cut into five acute ſegments. The flower hath five ſhort ſtamina in the chaps of the petal, terminated by roundiſh ſummits, and at the bottom of the tube are ſituated four germen, between which ariſes a permanent ſtyle the length of the ſtamina, crowned by an indented ſtigma; the empalement afterward becomes four capſules, incloſing four oval ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The Species are,

1. Cynoglossum (*Officinale*) ſtaminibus corollâ brevioribus, foliis lato-lanceolatis tomentoſis ſeſſilibus. Lin. Sp. Plant. 134. *Hounds Tongue with ſtamina ſhorter than the petal, and broad ſpear-ſhaped leaves, which are woolly, ſitting cloſe to the ſtalk.* Cynogloſſum majus vulgare. C. B. P. 257. *Common greater Hounds Tongue.*
2. Cynoglossum (*Appeninum*) ſtaminibus corollam æquantibus. Hort. Upſal. 33. *Hounds Tongue with ſtamina equalling the petal.* Cynogloſſum montanum maximum. Tourn. Inſt. R. H. 139.
3. Cynoglossum (*Creticum*) foliis oblongis tomentoſis, amplexicaulibus, caule ramoſo, ſpicis florum longiſſimis ſparſis. *Hounds Tongue with oblong woolly leaves embracing the ſtalks, a branching ſtalk, and very long looſe ſpikes to the flowers.* Cynogloſſum Creticum latifolium fœtidum. C. B. P. 257.
4. Cynoglossum (*Cheirifolium*) corollis calyce duplo longioribus, foliis lanceolatis. Prod. Leyd. 406. *Hounds Tongue having a petal twice the length of the empalement, and ſpear-ſhaped leaves.* Cynogloſſum Creticum, argenteo anguſto folio. C. B. P. 257.
5. Cynoglossum (*Virginianum*) foliis amplexicaulibus ovatis. Lin. Sp. 193. *Hounds Tongue with oval leaves which embrace the ſtalk.* Cynogloſſum Virginianum flore minimo albo. Baniſter. Cat.

6. Cynoglossum (*Luſitanicum*) foliis lineari lanceolatis ſcabris. Lin. Sp. 193. *Hounds Tongue with linear, ſpear-ſhaped, rough leaves.* Omphalodes Luſitanica elatior Cynogloſſi folio. Tourn. Inſt. R. H. 140.
7. Cynoglossum (*Linifolium*) foliis lineari-lanceolatis glabris. Hort. Cliff. 47. *Hounds Tongue with ſmooth, narrow, ſpear-ſhaped leaves.* Omphalodes Luſitanica lini folio. Tourn. Inſt. 140. *Commonly called Venus Navelwort.*
8. Cynoglossum (*Omphalodes*) repens, foliis radicalibus cordatis. Hort. Cliff. 47. *Creeping Hounds Tongue, whoſe lower leaves are heart-ſhaped.* Omphalodes pumila verna ſymphyti folio. Tourn. Inſt. 140.

The firſt ſort grows naturally by the ſide of hedges and foot-ways in many parts of England, ſo is ſeldom admitted into gardens; the roots of this ſort are uſed in medicine, which are gathered by the herb-folks in the fields. The leaves of this plant have a ſtrong odour, like that of mice in a trap. It flowers in June, and the ſeeds ripen in autumn.

The ſecond ſort grows naturally on the Apennine mountains; the leaves of this ſort are much larger, the petal of the flower is ſhorter, and the plants grow taller than thoſe of the firſt, and come earlier to flower in the ſpring; this is equally hardy as the common ſort, and where the ſeeds are permitted to ſcatter, there will be plenty of the plants ariſe without care.

The third ſort grows naturally in Andaluſia, I received the ſeeds of this from Gibraltar; this hath a tall branching ſtalk, garniſhed with oblong woolly leaves, which embrace the ſtalk with their baſe. The flowers are produced in looſe ſpikes, which come out from the ſide of the ſtalk, and are from ſix to eight inches long, the flowers are thinly placed on one ſide; theſe are blue, ſtriped with red, and appear in June. The ſeeds ripen in autumn, ſoon after which the root decays.

The fourth ſort grows naturally in Spain, and alſo in the iſland of Crete; I received this from Gibraltar, with thoſe of the former; this riſes with an upright ſtalk little more than a foot high, garniſhed with long, narrow, ſilvery leaves, having no foot-ſtalks. The flowers are produced from the ſide, and at the top of the ſtalks, which are but thinly diſperſed on the ſide, but at the top of the ſtalk are in ſmall cluſters; they are of a deep purple colour, and much longer than the empalement; theſe are ſucceeded by four broad buckler-ſhaped ſeeds, which are rough. It flowers in June, and the ſeeds ripen in autumn, ſoon after which the roots generally periſh.

The fifth ſort grows naturally in Virginia, and in other northern parts of America; this riſes with an upright branching ſtalk near four feet high. The ſtalks and leaves are covered with rough hairs, the branches are ſpread out on every ſide, and are but thinly garniſhed with leaves, from three to near four inches in length, and little more than one inch broad in the middle, gradually leſſening to both ends; they embrace the ſtalks with their baſe, and are placed alternate; the flowers grow ſcatteringly toward the end of the branches; theſe are ſmall and white; they appear in June, and are ſucceeded by four ſmall ſeeds, which ripen in autumn, and then the plants decay.

The ſixth ſort grows naturally in Portugal, where it was firſt diſtinguiſhed from the ſeventh by Dr. Tournefort. The ſeventh ſort had been long before that cultivated in the gardens for ornament, by the title of Venus Navelwort, but of late years that has been almoſt loſt; and the ſixth ſort is now generally preſerved in the Engliſh gardens, and the ſeeds are ſold by the ſeedſmen under that title, and is a much larger plant than the other, ſo makes a better appearance. The leaves of the ſixth ſort are broad at their baſe, and are gradually narrowed to the end; they are ſlightly covered with hairs. The ſtalks grow nine or ten inches high, and divide into many branches, each being terminated by a long looſe ſpike of white flowers, ſtanding on ſeparate foot-ſtalks, which are ſucceeded by four umbilicated ſeeds, from whence it had the title of Navelwort.

The ſeventh ſort ſeldom riſes more than five or ſix inches high; the ſtalks do not branch near ſo much as thoſe of the ſixth. The leaves are very narrow and long, of a grayiſh colour, and ſmooth. The flowers grow in ſhort looſe panicles at the end of the branches; theſe are white, but ſmaller than thoſe of the other ſort, and are ſucceeded by ſeeds of the ſame form. This plant was formerly titled Linum Umbillicatim, i. e. *umbilicated Flax*, from the leaves having ſome appearance of Flax, and the ſeeds having a hollow like a navel.

Theſe are both annual plants, and have been commonly ſown in gardens, with other low annual flowers, to adorn the borders of the flower-garden; but theſe ſhould be ſown in autumn, for thoſe which are ſown in the ſpring often fail, eſpecially in dry ſeaſons; and the autumnal plants always grow much larger than thoſe which ariſe from the ſpring ſowing, and come to flower earlier in the year. The ſeeds ſhould be ſown where the plants are deſigned to remain, for they do not bear tranſplanting, unleſs it is performed while they are young. The plants require no other culture but to be thinned where they are too cloſe, and kept clean from weeds. They flower in June and July, and the autumnal plants come a month earlier; their ſeeds ripen in autumn.

The eighth ſort is a low perennial plant, which grows naturally in the woods of Spain and Portugal, where it uſually flowers about Chriſtmas; this hath trailing branches, which put out roots from their joints, whereby it propagates very faſt. The leaves are heart-ſhaped, of a bright green colour, and ſtand upon long ſlender foot-ſtalks. The flowers grow in looſe panicles, which ariſe from the diviſions of the ſtalk; they are ſhaped like thoſe of Borage, but are ſmaller, and of a lively blue colour; they appear in March and April, and in a cool ſhady ſituation continue great part of May, but are rarely ſucceeded by ſeeds; but the plants propagate themſelves ſo faſt by their trailing branches, as to render the cultivation of them by ſeeds unneceſſary. It delights in a moiſt cool ſituation.

CYPERUS, Cypreſs Graſs.

There are about twenty ſpecies of this genus known, ſome of which grow naturally in England, but the far greateſt number are natives of America, where they grow in moiſt ſqualid places; and as there are not above two or three ſpecies which are preſerved in gardens, ſo it will be to little purpoſe to enumerate the others.

The Species are,

1. Cyperus (*Longus*) culmo triquetro folioſo, umbella folioſo ſupra decompoſita, pedunculis nudis, ſpicis alternis. Prod. Leyd. 50. *Cypreſs with a three-cornered ſtalk, an umbel with many leaves, alternate ſpikes on naked foot-ſtalks. Long-rooted Cypreſs of the ſhops.*
2. Cyperus (*Rotundus*) culmo triquetro ſubnudo, umbella decompoſita, ſpicis alternis linearibus. Flor. Zeyl. 36. *Cypreſs with a three-cornered naked ſtalk, a decompounded umbel, and linear ſpikes placed alternate. Round-rooted Cypreſs of the ſhops.*

The firſt ſort grows naturally in France and Italy, from whence the plant was brought for medicinal uſe, but at preſent it is very ſeldom uſed in England. The roots of this ſort are compoſed of many ſtrong fleſhy fibres which root deep in the ground, ſending up every ſpring a great number of graſſy three-cornered leaves near two feet long; the flower-ſtalks are triangular, nearly of the ſame length, ſupporting an umbel at the top, having many narrow triangular leaves under it; the ſpikes of the umbel are like thoſe of ſome ſorts of graſs, but the ſeeds rarely ripen in England; ſo the plant is here propagated by dividing the root in the ſpring, and if planted in a warm ſituation, will thrive here in the open air.

The ſecond ſort is tenderer than the firſt, ſo the round compreſſed roots ſhould be planted in pots, and ſheltered in winter.

CYPRIPEDIUM. Lin. Gen. Plant. 906. Calceolus. Tourn. Inſt. R. H. 436. tab. 249. Ladies Slipper, in French, *Sabot.*

The CHARACTERS are,

It hath a ſimple ſpadix. The germen ſits under the flower, which is covered with a ſpatha or ſheath. The flowers have four or five narrow ſpear-ſhaped petals, which expand. The nectarium, which is ſituated between the petals, is ſwollen and hollow, in ſhape of a ſhoe, or ſlipper. It hath two ſhort ſtamina which ſit upon the pointal, and are terminated by erect ſummits, which join to the upper lip of the nectarium; below the flower is fixed a ſlender contorted germen, ſupporting a ſhort ſtyle, adhering to the upper lip of the nectarium, crowned by an obſolete ſtigma. The germen afterward becomes an oval blunt capſule with three corners, having three furrows, three valves, and one cell, which is filled with ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's twentieth claſs, intitled Gynandria Diandria, the plants of this claſs and ſection have two ſtamina fixed to the ſtyle.

The SPECIES are,

1. CYPRIPEDIUM (*Calceolus*) radicibus fibroſis, foliis ovato-lanceolatis caulinis. Act. Upſal. 1740. *Ladies Slipper with fibrous roots, the leaves on the ſtalks oval and ſpear-ſhaped.* Calceolus Mariæ. Ger. 359. *Our Lady's Slipper.*
2. CYPRIPEDIUM (*Bulboſum*) ſcapo unifloro, foliis oblongis glabris petalis anguſtis acuminatis. *Ladies Slipper with one flower in a ſheath, oblong ſmooth leaves, and very narrow pointed petals.* Calceolus Mariæ luteus. Mor. H. R. Bloſs. *Yellow Ladies Slipper.*
3. CYPRIPEDIUM (*Hirſutum*) foliis oblongo-ovatis venoſis hirſutis, flore maximo. *Ladies Slipper with oblong, oval, veined leaves, which are hairy, and a very large flower.* Calceolus flore majore. Tourn. Inſt. R. H. 437. *Ladies Slipper with a larger flower.*

The firſt ſort grows naturally in ſome ſhady woods in the north of England. I found it in the park of Borough-Hall, in Lancaſhire, the ſeat of the late Robert Fenwick, Eſq; It hath a root compoſed of many fleſhy fibres, from which ariſe, in the ſpring, two, three, or more ſtalks, in proportion to the ſtrength of the root; theſe grow nine or ten inches high, and are garniſhed with oval ſpear-ſhaped leaves, having a few longitudinal veins; in the boſom of one of the upper leaves is incloſed the flower-bud, which is ſupported by a ſlender foot-ſtalk, which generally turns a little bud on one ſide. The flower hath four dark purple petals, placed in form of a croſs, which ſpread wide open. In the center is ſituated the large hollow nectarium, almoſt as large as a bird's egg, ſhaped like a wooden ſhoe, of a pale yellowiſh colour, with a few broken ſtreaks; the opening is covered with two ears; the upper one is tender, white, and ſpotted with purple; the lower is thick, and of an herbaceous colour. The flowers appear about the end of May, and the ſtalks decay early in autumn.

The ſecond ſort grows naturally in Virginia, and other parts of North America; this hath longer and ſmoother leaves than the former. The two ſide petals of the flower are long, narrow, and terminate in acute points, and are wreathed, or undulated on their ſides. The nectarium is oblong, and narrower than in the firſt ſort, and is yellow, ſpotted with browniſh red. The ſtalks riſe near a foot and a half high.

The third ſort grows naturally in America, where the inhabitants call it Moccaſin Flower; this riſes a foot and a half high. The leaves are of an oblong oval form, and are deeply veined. The flower is large, of a reddiſh brown colour, marked with a few purple veins. This ſort flowers in the end of May.

All theſe ſorts are with difficulty preſerved in gardens; they muſt be planted in a loamy ſoil, and in a ſituation where they may have the morning ſun only. They muſt be procured from the places where they naturally grow, for they cannot be propagated in gardens. The roots ſhould be ſeldom removed, for tranſplanting them prevents their flowering.

CYSTICAPNOS. See FUMARIA.

CYTISO-GENISTA. See SPARTIUM.

CYTISUS. Lin. Gen. Plant. 785. Tourn. Inſt. R. H. 647. tab. 416. [ſo called from Cythos, an iſland in the Archipelago, where it grew in great plenty.] Baſe-tree Trefoil, in French, *Citiſe.*

The CHARACTERS are,

It hath a butterfly flower, with a ſhort bell-ſhaped empalement of one leaf, divided in two lips, the upper being bifid and acute, the under indented in three parts. The ſtandard of the flower is riſing, oval, and reflexed on the ſides. The wings are obtuſe, erect, and the length of the ſtandard. The keel is bellied and acute. It hath ten ſtamina, nine joined, and one ſtanding ſeparate, terminated by riſing ſummits. It hath an oblong germen, ſupporting a ſingle ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes an oblong blunt pod, narrow at their baſe, filled with kidney-ſhaped flatted ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, from the flowers having ten ſtamina divided into two bodies.

The SPECIES are,

1. CYTISUS (*Laburnum*) foliis oblongo-ovatis, racemis brevioribus pendulis, caule arboreo. *Cytiſus with oblong oval leaves, ſhort ſpikes of flowers hanging downward, and a tree-like ſtalk.* Cytiſus Alpinus latifolius, flore racemoſo pendulo. Tourn. Inſt. R. H. 648. *Commonly called Laburnum.*
2. CYTISUS (*Alpinus*) foliis ovato-lanceolatis, racemis longioribus pendulis, caule fruticoſo. *Cytiſus with oval ſpear-ſhaped leaves, long pendulous bunches of flowers, and a ſhrubby ſtalk.* Cytiſus Alpinus anguſtifolius, flore racemoſo pendulo longiore. Tourn. Inſt. R. H. 648. *Commonly called long-ſpiked Laburnum.*
3. CYTISUS (*Nigricans*) racemis ſimplicibus erectis, foliolis ovato-oblongis. Hort. Cliff. 354. *Cytiſus with ſingle erect bunches of flowers, and oval oblong leaves.* Cytiſus glaber nigricans. C. B. P. 390. *Black ſmooth Cytiſus.*
4. CYTISUS (*Seſſilibus*) racemis erectis, calycibus bracteâ triplici auctis, foliis floralibus ſeſſilibus. Lin. Sp. Plant. 739. *Cytiſus with erect bunches of flowers, three laminæ under the empalement, and the leaves on the flower branches ſitting cloſe.* Cytiſus glabris, foliis ſubrotundis, pediculis breviſſimis. C. B. P. 390. *Commonly called by the gardeners,* Cytiſus ſecundus Cluſii.
5. CYTISUS (*Hirſutis*) pedunculis ſimplicibus lateralibus, calycibus hirſutis trifidis ventricoſo-oblongis. Hort. Upſal. 211. *Cytiſus with ſingle foot-ſtalks on the ſide of the branches, trifid hairy empalements, oblong and bellied.* Cytiſus incanus ſiliqua longiore. C. B. P. 390. *Commonly called hairy, or Evergreen Cytiſus of Naples.*
6. CYTISUS (*Argenteus*) floribus ſeſſilibus, foliis tomentoſis, caulibus herbaceis. Lin. Sp. Plant. 740. *Cytiſus with flowers ſitting cloſe to the branches, woolly leaves, and an herbaceous ſtalk.* Cytiſus humilis argenteus anguſtifolius. Tourn. Inſt. 648.
7. CYTISUS (*Supinus*) floribus umbellatis terminalibus, ramis decumbentibus, foliolis ovatis. Lin. Sp. 1042. *Low Cytiſus with umbellated flowers terminating the branches, which are trailing, and oval leaves.* Cytiſus ſupinus foliis infra & ſiliquis molli lanugine pubeſcentibus. C. B. P. 390.
8. CYTISUS (*Auſtriacus*) floribus umbellatis terminalibus, caulibus erectis foliolis lanceolatis. Lin. Sp. 1042. *Cytiſus with umbellated flowers terminating the branches, erect ſtalks and ſpear-ſhaped leaves.* Cytiſus floribus capitatis, foliolis ovato-oblongis, caule fruticoſo. Dict. Hort. *Commonly called Siberian Cytiſus.*
9. CYTISUS (*Æthiopicus*) racemis lateralibus ſtrictis, ramis angulatis, foliolis cuneiformibus. Lin. Sp. 1042. *Cytiſus with narrow bunches of flowers proceeding from the ſide of the branches, which are angular, and wedge-ſhaped leaves.* Cytiſus Æthiopicus, ſubrotundis incanis minoribus foliis, floribus parvis luteis. Pluk. Alm. 128.
10. CYTISUS (*Græcus*) foliis ſimplicibus lanceolato-linearibus, ramis angulatis. Lin. Sp. 1043. *Cytiſus with ſingle, linear, ſpear-ſhaped leaves, and angular branches.* Barba Jovis linariæ folio, flore luteo parvo. Tourn. Cor. 44.

11. Cytisus (*Cayan*) racemis axillaribus erectis, foliolis sublanceolatis tomentosis, intermedio longiùs petiolato. Flor. Zeyl. 357. *Cytisus with erect spikes of flowers proceeding from the sides of the branches, and spear-shaped leaves which are woolly, the foot-stalk of the middle one being the longest.* Cytisus arborescens, fructu eduli albo. Plum. Cat. 19. *Commonly called Pidgeon Pea in America.*

The first sort is the common broad-leaved Laburnum, which was formerly in greater plenty in the English gardens than at present; for since the second sort hath been introduced, it has almost turned this out; the spikes of flowers being much longer, they make a finer appearance when they are in flower, which has occasioned their being more generally cultivated; but the first grows to be the largest tree, and the wood of it is very hard, of a fine colour, and will polish very well; it approaches near to green Ebony, so is by the French titled Ebony of the Alps, and is there used for many kinds of furniture; but in England there are few of these trees which have been suffered to stand long enough to arrive to any considerable size, for as they have been only considered as an ornamental tree, the frequent alterations which most of the gardens in England have undergone, have occasioned their being rooted out wherever they were growing; but in some of the old gardens in Scotland, where they have been permitted to stand, there are large trees of this kind, which are fit to cut down for the use of the timber. I have seen two old trees of it in gardens, which were more than a yard in girt, at six feet from the ground, and these had been broken and abused, otherwise might have been much larger: they grow very fast, and are extremely hardy, so may be well worth propagating upon poor shallow soils, and in exposed situations. His Grace the Duke of Queensberry sowed a great quantity of the seeds of this tree, upon the side of the downs, at his seat near Amesbury, in Wiltshire, where the situation was very much exposed, and the soil so shallow, as that few trees would grow there; yet in this place the young trees were twelve feet high in four years growth, so became a shelter to the other plantations, for which purpose they were designed; but the hares and rabbits are great enemies to these trees, by barking them in winter, so that where these trees are cultivated, they should be fenced from these animals.

Both these sorts are easily propagated by seeds, which the trees produce in great plenty. If these are sown upon a common bed in March, the plants will appear by the middle or end of April, and will require no other care but to be kept clean from weeds during the following summer; and if the plants are too close together, they may be transplanted the autumn following, either into a nursery, where they may grow a year or two to get strength, or into the places where they are designed to remain: where people would cultivate them for their wood, it will be the best way to sow the seeds upon the spot where they are intended to grow, because these trees send out long, thick, fleshy roots to a great distance, which will penetrate gravel or rocks; and if these roots are cut or broken, it greatly retards their growth; therefore when they are not sown upon the intended spot, they should be transplanted thither young, otherwise they will not grow to near the size; though where they are only designed for ornament, the removing the plants twice will stop their growth, and cause them to be more productive of flowers; but all trees intended for timber, are much better sown on the ground where they are designed to stand, than if they are transplanted.

If the seeds of these trees are permitted to scatter in winter, the plants will rise in great plenty the following spring, so that a few trees will soon supply any person with a sufficient number of the plants.

These trees flower in May, at which time they make a fine appearance, their branches being generally loaded with long strings of yellow flowers, which hang down from every part. The seeds grow in long pods, which ripen in autumn. There is a variety of both these trees with variegated leaves, which some persons are fond of cultivating; but this is only to be done by cuttings or layers, for the seeds of these will produce plants with green leaves: the cuttings should be planted in autumn, when the leaves begin to fall, and the plants must have a poor soil, for in good ground they are apt to become plain.

If the first sort comes to be considered as a useful wood, which there is no reason to doubt it may be, it may be planted in large clumps in parks, where they will be very ornamental; and I am certain, from long experience, that this tree will thrive upon many soils, and in such situations as few other trees will make any progress; the objection to fencing is the same here, as for any other trees, for wherever plantations are made, if they are not well secured from animals, they will not answer the design of the planters.

The second sort differs from the first, in having narrower leaves, longer bunches of flowers, and the trees do not grow so large and strong; this difference I find is constant from seed. There is another sort mentioned by Tournefort, with shorter bunches of flowers than either of these, one tree of which kind I thought I had found in a garden; the bunches of the flowers upon this tree were close and almost round, but I sowed the seeds of it, and the plants proved to be only the common sort.

The third sort grows naturally in Austria, in Italy and Spain, and at present is pretty rare in the English gardens; it was formerly in some of the curious gardens here, but had been long lost, till a few years ago, when I procured the seeds from abroad, which succeeded in the Chelsea gardens, where the plants have flowered and produced ripe seeds, which have been communicated to several curious persons.

This shrub seldom rises more than three or four feet high in England; it naturally puts out many lateral branches near the ground, which spread out on every side, so as to form a low shrubby bush, so is with difficulty raised to a stem: the branches are very slender, and their ends are frequently killed if the winter is severe; these are garnished with oblong oval leaves, growing by threes on each foot-stalk; they are equal in size, and of a dark green colour; the branches grow erect, and are terminated by spikes of yellow flowers, about four or five inches in length, standing upright; and as all the branches are thus terminated, so when the shrubs are in flower, they make a fine appearance; it flowers in July, after most of the other sorts are past, and the seeds ripen in autumn. This is propagated by seeds, which should be sown upon a bed of light earth in March, covering them about one third of an inch with fine screened mould; in the beginning of May the plants will appear, when they must be carefully weeded, and during the following summer they must constantly be kept clean, which is all the culture they require till autumn, when it will be very proper to arch the bed over with hoops, that in frosty weather the plants may be covered with mats, to prevent their tender shoots from being killed; for as these young plants are apt to continue growing later in the autumn than those which are become woody, so they are much more susceptible of cold; therefore where there is not some care taken to cover them, if the winter should prove severe, many of them may be entirely destroyed, and the others killed to the ground. The spring following, after the danger of hard frost is over, the plants should be carefully taken up, and planted out at the distance of one foot, row from row, and six inches asunder in the rows; this should be in a sheltered situation, and as these plants do not shoot till late in the spring, so they need not be transplanted before the end of March, or the beginning of April; and if the season should then prove warm and dry, it will be proper to give the plants some water to settle the earth to their roots; and if the drought continue, and the waterings are three times repeated at a week's interval from each, it will be of service to the plants. After they have taken new root, they will require

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no farther care, but to keep them conſtantly clean from weeds; in this nurſery the plants may remain two years, in which time they will have acquired ſtrength enough to be tranſplanted where they are to remain. There is a figure of this ſhrub exhibited in the 117th plate of my figures of plants.

The fourth ſort grows naturally in the ſouth of France, in Spain and Italy, but has been long cultivated in the nurſery gardens, as an ornamental flowering ſhrub, by the title of Cytiſus ſecundus Cluſii. This riſes with a woody ſtalk, putting out many branches which are covered with a browniſh bark, and garniſhed by obverſe, oval, ſmall leaves, growing by threes on very ſhort foot-ſtalks. The flowers are produced in cloſe ſhort ſpikes at the end of the branches, ſtanding erect; they are of a bright yellow colour, and appear in June; theſe are ſucceeded by ſhort broad pods, which contain one row of kidney-ſhaped ſeeds, which ripen in Auguſt. Theſe ſhrubs will riſe to the height of ſeven or eight feet, and become very buſhy; they are very hardy, ſo will thrive in any ſituation, and upon almoſt any ſoil, which is not too wet. They are propagated by ſeeds, which may be ſown upon a common bed of light earth in the ſpring, and kept clean from weeds the following ſummer; and in autumn the plants may be tranſplanted into a nurſery in rows, one foot apart, and at ſix inches diſtance in the rows, where they may remain two years to acquire ſtrength, and ſhould then be removed to the places where they are deſigned to grow.

The fifth ſort hath a ſoft ſhrubby ſtalk, dividing into many branches, which grow erect, and frequently riſe to the height of eight or ten feet; the ſtalks and leaves of this are very hairy; the leaves are oval, growing three upon each foot-ſtalk, and are placed cloſely on the branches; the flowers come out from the ſide of the ſtalk, in ſhort bunches; they are of a pale yellow, and appear in June; theſe are ſucceeded by long, narrow, hairy pods, with one row of kidney-ſhaped ſeeds, which ripen in September.

This ſort, of late years, has been much cultivated in the nurſery gardens near London, by the title of Evergreen Cytiſus of Naples; but as in ſevere froſt theſe ſhrubs are ſometimes killed, ſo they are not proper for every ſituation, therefore ſhould only be planted on a dry ſoil, and in warm ſituations; they are alſo very difficult to remove, when grown to any ſize, for they ſhoot long roots deep into the ground, and when theſe are broken or cut, the plants ſeldom ſurvive it. This may be propagated in the ſame manner as hath been directed for the third ſort. It grows naturally in the ſouth of France, in Spain and Italy.

The ſixth ſort hath herbaceous ſtalks, garniſhed with woolly leaves; the flowers are produced ſometimes ſingle, at other times two, three, or more grow together at the end of the branches; theſe appear in June, and are ſucceeded by hairy pods.

This plant is propagated by ſeeds, which may be ſown at the ſame time, and the plants ſhould be afterward treated in the ſame way, as is directed for the third ſort.

The ſeventh ſort grows naturally in Sicily, Italy, and Spain; this is a perennial plant, from whoſe downright root proceed ſeveral weak branches which trail upon the ground, and extend to the length of eight or ten inches; theſe are garniſhed with oblong leaves, placed by threes upon pretty long foot-ſtalks; they are hoary on their under ſide, but ſmooth above; the flowers are collected in heads at the end of the ſtalks, having a cluſter of leaves under them; they are of a deep yellow colour, and appear the latter end of June, and in warm ſeaſons theſe are ſucceeded by flat woolly pods, containing one row of ſmall kidney-ſhaped ſeeds, which ripen in September. This plant is propagated by ſeeds, which ſhould be ſown where the plants are to remain, and ſhould be treated in the ſame manner as the ſixth ſort.

The eighth ſort grows naturally in Tartary, from whence the ſeeds were ſent to the Imperial garden at Peterſburgh, and hath ſince been ſent to many of the curious gardens in Europe, which have been furniſhed with the ſeeds. This hath a ſhrubby ſtalk, which riſes near four feet high, dividing into many branches, which, when young are covered with a green bark, cloſely garniſhed by oblong, oval, ſmooth leaves, which are of a hoary green colour; the flowers are produced in cloſe heads at the end of the branches, having a cluſter of leaves under them; they are of a bright yellow colour, and appear in the beginning of May; theſe are ſometimes ſucceeded by ſhort woolly pods, containing three or four ſmall kidney-ſhaped ſeeds in each. This is propagated by ſeeds, which ſhould be ſown early in April, on a border of ſtrong ground expoſed to the eaſt; for if they are ſown where they have full ſun, the plants will not thrive. This requires a cold ſituation and a pretty ſtrong ſoil, otherwiſe it will not thrive.

The ninth ſort grows naturally about Algiers, from whence the Rev. Dr. Shaw brought the ſeeds, which ſucceeded in the Chelſea garden. This riſes with a ſoft ſhrubby ſtalk to the height of eight or ten feet, putting out many ſlender branches on every ſide, garniſhed with ſmall wedge-ſhaped leaves, which are indented at the top, of a dark green colour and ſmooth; the flowers come out frequently ſingle from the ſide of the branches, theſe are large and of a bright yellow; they appear in June, and are ſometimes ſucceeded by pods containing three or four kidney-ſhaped ſeeds, which ripen in autumn. This ſort is too tender to live in the open air through the winter in England, therefore the plants muſt be treated in the ſame way as thoſe which are natives of the ſame country.

The tenth ſort grows naturally in the iſlands of the Archipelago; it riſes with a ligneous ſtalk ſix or ſeven feet high, ſending out many angular lateral branches, garniſhed with ſingle, narrow, ſpear-ſhaped leaves; the flowers are produced in ſhort bunches from the ſide of the branches; they are ſmall, yellow, and appear in July and Auguſt, but are not ſucceeded by ſeeds in England.

This is propagated by cuttings, which if planted on a bed of light earth the beginning of July, and are cloſely covered with a bell or hand-glaſs, which ſhould be ſhaded from the ſun in the middle of the day, they will put out roots by the middle or end of September; when they ſhould be carefully taken up, planting each in a ſeparate ſmall pot, carefully watering and ſhading them until they have taken new root; after which they may be expoſed in a ſheltered ſituation till the end of October, when they muſt be removed into ſhelter, for this plant is too tender to live in the open air in England.

The eleventh ſort grows naturally in the iſlands of America, and alſo at the Cape of Good Hope. This riſes with a weak ſhrubby ſtalk eight or ten feet high, ſending out many erect ſide branches, which grow erect, and are garniſhed with ſpear-ſhaped woolly leaves, placed by threes, the middle lobe having a longer diſtinct foot-ſtalk, than the two on each ſide which grow cloſe to the principal foot-ſtalk. The flowers come out from the ſide of the branches, ſometimes ſingle, at other times in cluſters; they are of a deep yellow colour, and about the ſize of thoſe of the common Laburnum; theſe are ſucceeded by hairy pods about three inches long, which are ſickle-ſhaped, ending with a long acute point, ſwelling at the place where each ſeed is lodged; the ſeeds are roundiſh, a little inclined to a kidney-ſhape. Theſe ſeeds are eſteemed an excellent food for pigeons in America, from whence it had the title of Pigeon Pea.

This plant grows only in very warm countries, ſo cannot be preſerved in England, unleſs it is placed in a warm ſtove. It riſes eaſily from ſeeds in a hot-bed, and will grow three or four feet high the firſt year, provided they have a proper heat, and the ſecond year they will produce flowers and ſeeds. The plants muſt be placed in the bark-bed in the ſtove, and treated in the ſame manner as other tender plants from the ſame countries: they ſhould have but little water in winter, and in the ſummer ſhould have a large ſhare of free air admitted to them in warm weather.

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DAFFODIL. See NARCISSUS.
DAISIES. See BELLIS.
DALECHAMPIA. Lin. Gen. Plant. 1022. Plum. Nov. Gen. 17. tab. 38.

This plant was ſo named by father Plumier, in honour of the memory of Jacobus Dalechamp, who was a curious botaniſt.

The CHARACTERS are,

It hath male and female flowers on the ſame plant; the male flowers are ſituated between two bractea; they have a common involucrum cut into four erect ſegments; the empalement is compoſed of ſix obtuſe oval leaves, reflexed at their points. They have no petals, but have a broad nectarium, having many plain folds lying over each other, and many ſtamina joined in a long column, terminated by roundiſh ſummits having four furrows; the female flowers are alſo ſituated in the ſame manner as the male; theſe have a permanent three-leaved involucrum, and each have a permanent ten-leaved empalement; they have no petals, but a roundiſh germen ſhorter than the empalement, having three furrows ſupporting a long ſlender ſtyle, bending toward the male flowers, crowned by a headed ſtigma; the germen afterward becomes a roundiſh capſule with three cells, incloſing one roundiſh ſeed in each.

This genus of plants is ranged in the ninth ſection of Linnæus's twenty-firſt claſs, intitled Monœcia Monadelphia, the plants having male and female flowers on the ſame root, and the ſtamina of the male flowers are joined in one body to the ſtyle.

We have but one SPECIES of this in England, viz.

DALECHAMPIA (*Scandens*) foliis trilobis glabris, floribus axillaribus caule volubili. *Dalechampia with ſmooth leaves having three lobes, flowers growing from the ſides of the branches, and a twining ſtalk.* Dalechampia ſcandens, lupuli foliis, fructu tricocco glabro, calyce hiſpido. Houſt. MSS.

This plant grows naturally in Jamaica, from whence the late Dr. Houſtoun ſent me the ſeeds, which ſucceeded in the Chelſea garden, where the plants have flowered and perfected their ſeeds. This muſt be a different plant from that which Plumier found growing in Martinico, or he has taken the involucrum for the ſeed-veſſel by his title of it; for he calls it fructu tricocco hiſpido, whereas this hath a ſmooth fruit with a hiſpid empalement.

It hath a root compoſed of many fibres, which extend to a great diſtance, from which ariſe ſeveral weak twining ſtalks, that faſten themſelves to the neighbouring plants, and mount up to a conſiderable height; theſe are garniſhed at each joint by one leaf, having three lobes; they are ſmooth, the two ſide lobes are oblique to the midrib, but the middle one is equal. The flowers are produced from the ſide of the ſtalks, three or four growing upon each foot-ſtalk; ſome of theſe are male, and others female; they are of an herbaceous colour, and ſmall, ſo make no appearance; they have each a double involucrum, made up of two orders of leaves, which are narrow, and armed with ſmall briſtly hairs, which ſting the hands of thoſe who unwarily touch them; the flowers are ſucceeded by roundiſh capſules, having three prominent lobes which are ſmooth, each incloſing a ſingle ſeed.

This plant is propagated by ſeeds, which muſt be ſown early in the ſpring on a hot-bed; and when the

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plants are come up three inches high, they ſhould be carefully tranſplanted, each into a ſeparate ſmall pot, filled with light rich earth, and then plunged into a hot-bed of tanners bark, being careful to ſcreen them from the ſun until they have taken new root; after which time the glaſſes of the hot-bed ſhould be raiſed every day, in proportion to the heat of the weather, to admit freſh air to the plants; they muſt alſo be frequently watered, for they naturally grow in moiſt places. When the plants have grown ſo large as to fill theſe pots with their roots, they ſhould be removed into larger pots, and placed in the bark-bed in the ſtove, where they muſt be ſupported either with ſtakes or a trellis, round which they will twine, and riſe to the height of eight or ten feet. Theſe plants muſt be kept conſtantly in the ſtove, for they are too tender to bear the open air in this country, even in the ſummer ſeaſon; therefore they ſhould be placed with Convolvuluſes, and other twining plants, near the back of the ſtove, where ſhould be made an eſpalier to ſupport them; in which ſituation they will thrive, and produce their flowers, and ſometimes will perfect their ſeeds in this country; but, in order to this, they ſhould have a large ſhare of freſh air in warm weather, by drawing down the upper glaſſes of the ſtove; but in winter the ſtove ſhould be kept to a temperate heat, or rather higher. In ſummer they will require a large ſhare of water, but in winter it ſhould be given to them in leſs quantities, but muſt be frequently repeated. Theſe plants do not continue above two years, ſo that young plants ſhould be raiſed in order to preſerve the kind.

DAMASONIUM, Star-headed Water Plantain.

The CHARACTERS are,

It hath a flower compoſed of three leaves, which are placed orbicularly, and expand in form of a Roſe: out of the flower-cup riſes the pointal, which afterward becomes a ſtar-ſhaped fruit, with many cells, which are full of oblong ſeeds.

The SPECIES are,

1. DAMASONIUM (*Aliſma*) ſtellatum. Lugd. *Star-headed Water Plantain.*
2. DAMASONIUM (*Flava*) Americanum maximum, plantaginis folio, flore flaveſcente, fructu globoſo. Plum. *Greateſt American Water Plantain, with a Plantain leaf, a yellowiſh flower, and a globular fruit.*

The firſt of theſe plants is a native of England; it grows commonly in ſtanding waters, which are not very deep. It is ſometimes uſed in medicine, but never cultivated in gardens, ſo muſt be gathered for uſe in the places of its growth.

The ſecond ſort grows in Jamaica, Barbadoes, and ſeveral other places in the warm parts of America, where it is generally found in ſtagnating waters, and other ſwampy places; ſo that it would be difficult to preſerve this plant in England, for it will not live in the open air, and requires a bog to make it thrive; but as it is a plant of no great beauty or uſe, it is not worth the trouble of cultivating in this country.

DANDELION. See LEONTODON.

DAPHNE. Lin. Gen. Plant. 436. Thymelæa. Tourn. Inſt. R. H. 594. tab. 366. Spurge Laurel, or Mezereon.

The

The CHARACTERS are,

The flower hath no empalement; it is cylindrical, of one petal, which is cut into four parts at the top, where it ſpreads open; it hath eight ſhort ſtamina inſerted in the tube, which are alternately lower, terminated by erect bilocular ſummits. The oval germen is ſituated at the bottom of the tube, and is crowned by a headed depreſſed ſtigma; the germen afterward becomes a roundiſh berry with one cell, incloſing one roundiſh fleſhy ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's eighth claſs, intitled Octandria Monogynia, from the flower having eight ſtamina and one germen.

The SPECIES are,

1. DAPHNE (*Laureola*) racemis axillaribus, foliis lanceolatis glabris. Lin. Sp. Plant. 357. *Daphne with bunches of flowers proceeding from the ſides of the branches, and ſmooth ſpear-ſhaped leaves.* Thymelæa lauri folio ſempervirens, ſeu laureola mas. Tourn. Inſt. 595. *Commonly called Spurge Laurel.*
2. DAPHNE (*Mezereon*) floribus ſeſſilibus ternis caulinis, foliis lanceolatis deciduis. Lin. Sp. Plant. 357. *Daphne with three flowers together ſitting cloſe to the ſtalk, and ſpear-ſhaped leaves, which fall off in autumn.* Thymelæa lauri folio deciduo, ſive laureola fœmina. Tourn. Inſt. 595. *Commonly called Mezereon.*
3. DAPHNE (*Thymelæa*) floribus ſeſſilibus axillaribus, foliis lanceolatis, caulibus ſimpliciſſimis. Lin. Sp. Plant. 356. *Daphne with flowers ſitting cloſe to the ſides of the branches, ſpear-ſhaped leaves, and ſingle ſtalks.* Thymelæa foliis polygalæ glabris. C. B. P. 463.
4. DAPHNE (*Tarton-raire*) floribus ſeſſilibus aggregatis axillaribus, foliis ovatis utrinque pubeſcentibus nervoſis. Lin. Sp. Plant. 356. *Daphne with flowers in cluſters ſitting cloſe to the ſides of the branches, and oval nervous leaves covered with ſilky hairs on both ſides.* Thymelæa foliis candicantibus ſerici inſtar mollibus. C. B. P. 463. *Commonly called Tarton-raire.*
5. DAPHNE (*Alpina*) floribus ſeſſilibus aggregatis lateralibus, foliis lanceolatis obtuſiuſculis ſubtus tomentoſis. Lin. Sp. Plant. 356. *Daphne with cluſters of flowers growing cloſe to the ſides of the branches, and ſpear-ſhaped blunt leaves woolly on their under ſide.* Chamelæa Alpina, folio inferne incano. C. B. P. 462.
6. DAPHNE (*Cneorum*) floribus congeſtis terminalibus ſeſſilibus, foliis lanceolatis nudis. Lin. Sp. Plant. 357. *Daphne with cluſters of flowers ſitting cloſe on the tops of the branches, and naked ſpear-ſhaped leaves.* Cneorum. Matth. Hiſt. 46.
7. DAPHNE (*Gnidium*) paniculâ terminali, foliis linearilanceolatis acuminatis. Lin. Sp. Plant. 357. *Daphne with a panicle of flowers terminating the branches, and narrow, ſpear-ſhaped, pointed leaves.* Thymelæa foliis lini. C. B. P. 463.
8. DAPHNE (*Squarroſa*) floribus terminalibus pedunculatis, foliis ſparſis linearibus patentibus mucronatis. Lin. Sp. Plant. 358. *Daphne with flowers terminating the branches, having foot-ſtalks, and narrow, ſpreading, acute-pointed leaves, placed ſcatteringly on the branches.* Thymelæa capitata lanuginoſa, foliis creberrimis minimis aculeatis. Burm. Afr. 134. tab. 49. fol 1.
9. DAPHNE (*Americana*) foliis linearibus acutis, floribus racemoſis axillaribus. *Daphne with very narrow acute leaves, and flowers growing in bunches from the ſides of the branches.* Thymelæa fruteſcens roriſmarini folio, flore albo. Plum. Cat.

The firſt ſort grows common in the woods in many parts of England, and is commonly known by the title of Spurge Laurel; of late years there are poor people, who get the young plants out of the woods, and carry them about the town to ſell in the winter and ſpring. This is a low evergreen ſhrub, which riſes with ſeveral ſtalks from the root to the height of two or three feet, dividing upward into ſeveral branches, garniſhed with thick ſpear-ſhaped leaves, which come out irregularly on every ſide, ſitting pretty cloſe to the branches, they are ſmooth and of a lucid green; between theſe, toward the upper part of the ſtalks, come out the flowers in ſmall cluſters; they are of a yellowiſh green, and appear ſoon after Chriſtmas, if the ſeaſon is not very ſevere; theſe are ſucceeded by oval berries, which are green till June, when they ripen and turn black, ſoon after which they fall off. The whole plant is of a hot cauſtic taſte, burning and inflaming the mouth and throat. The leaves continue green all the year, ſo theſe plants are ornamental in winter; and as they will thrive under tall trees, they are very proper to fill up the ſpaces in plantations.

The ſecond ſort grows naturally in Germany, and there hath been a diſcovery made of its growing in ſome woods near Andover in Hampſhire, from whence a great number of plants have been taken of late years. This has been long cultivated in the nurſery-gardens as a flowering ſhrub, and is a very ornamental plant in gardens, very early in the ſpring, before others make their appearance. There are two diſtinct ſorts of this, one with a white flower which is ſucceeded by yellow berries, the other with Peach-coloured flowers and red fruit. Theſe are by ſome ſuppoſed to be accidental varieties ariſing from the ſame ſeeds, but I have ſeveral times raiſed theſe plants from ſeeds, and always found the plants come up the ſame, as thoſe from which the ſeeds were taken, ſo they do not vary, therefore may be called different ſpecies. There is a variety of the Peach-coloured Mezereon, with flowers of a much deeper colour than the common, but theſe I have always found to vary in their colours when raiſed from ſeeds. This ſhrub grows to the height of five or ſix feet, with a ſtrong woody ſtalk, putting out many woody branches on every ſide, ſo as to form a regular head; the flowers come out very early in the ſpring, before the leaves appear, growing in cluſters all round the ſhoots of the former year; there are commonly three flowers produced from each knot or joint, ſtanding on the ſame ſhort foot-ſtalk; theſe have ſhort ſwelling tubes, which are divided into four parts at the top, which ſpread open; they have a very fragrant odour, ſo that where there are plenty of the ſhrubs growing together, they perfume the air to a conſiderable diſtance round them: after the flowers are paſt, the leaves come out, which are ſmooth, ſpear-ſhaped, and placed without order; they are about two inches long, and three quarters broad in the middle, gradually leſſening to both ends; the flowers are ſucceeded by oval berries, which ripen in June; thoſe of the Peach-coloured flowers are red, and thoſe of the white yellow. The flowers appear in February and March, and ſometimes in mild winters they appear in January. This plant was formerly uſed in medicine, but as every part of it has a hot cauſtic taſte, ſo few preſcribe the uſe of it at preſent.

This is propagated by ſeeds, which ſhould be ſown on a border expoſed to the eaſt, ſoon after the berries are ripe; for if they are not ſown till the ſpring following they often miſcarry, and always remain a year in the ground before the plants appear; whereas thoſe which are ſown in Auguſt, will grow the following ſpring, ſo that a year is ſaved, and theſe never fail. When the plants come up, they will require no other care but to keep them clean from weeds, and if the plants are not too cloſe together, they may continue in the ſeed-bed, to have the growth of two ſummers, eſpecially if they do not make great progreſs the firſt year; then at Michaelmas, when the leaves are ſhedding, they ſhould be carefully taken up ſo as not to break or tear their roots, and planted into a nurſery at about ſixteen inches row from row, and eight or nine inches aſunder in the rows; in this nurſery they may remain two years, by which time they will be fit to remove to the places where they are deſigned to remain for good: the beſt ſeaſon to tranſplant theſe trees is in autumn, for as theſe plants begin to vegetate very early in the ſpring, ſo it is not proper to tranſplant them at that ſeaſon. Theſe plants grow beſt in a light ſandy earth which is dry, for in cold wet land they become moſſy, and make little progreſs; ſo that upon ſuch ſoils they never grow to any ſize, and produce few flowers.

Although

Although the berries of this tree are ſo very acrid, as to burn the mouth and throat of thoſe who may incautiouſly taſte them, yet the birds greedily devour them, as ſoon as they begin to ripen; ſo that unleſs the ſhrubs are covered with nets to preſerve the berries, they will all be deſtroyed before they are fit to gather. There is of this and the former ſort, ſome plants with variegated leaves, which ſome perſons are fond to have in their gardens, but the plain are much more beautiful.

The third ſort grows naturally in Spain, Italy, and the ſouth of France, where it riſes to the height of three or four feet, with a ſingle ſtalk covered with a light-coloured bark; the flowers come out in cluſters on the ſides of the ſtalks, which are of an herbaceous colour, ſo make but little appearance; they appear early in the ſpring, and are ſucceeded by ſmall berries which are yellowiſh when ripe.

The fourth ſort grows naturally in the ſouth of France, from whence I received the ſeeds. This is a low ſhrubby plant, which ſends out ſeveral weak ſtalks from the root, which grow about a foot long, and ſpread about irregularly; theſe ſeldom become woody in England, but are tough and ſtringy, covered with a light bark; the leaves are ſmall, of an oval form, and are very ſoft, white, and ſhining like ſattin; theſe ſit pretty cloſe to the ſtalks; between theſe the flowers come out in thick cluſters from the ſide of the ſtalks; they are white, and are ſucceeded by roundiſh berries having one hard ſeed. This flowers here in June, but doth not produce ripe ſeeds.

The fifth ſort grows on the mountains near Geneva, and in other parts of Italy, where it riſes about three feet high; the flowers of this come out in cluſters from the ſide of the branches, early in the ſpring. The leaves are ſpear-ſhaped, ending in blunt points, and are hoary on their under ſide. The flowers are ſucceeded by ſmall roundiſh berries, which turn red when ripe.

The ſixth ſort grows naturally on the Alps, as alſo upon the mountains near Verona, from whence it was ſent me; this is a very humble ſhrub, ſeldom growing more than one foot high, with ligneous ſtalks, which put out ſeveral ſide branches; theſe are garniſhed with narrow ſpear-ſhaped leaves, which are placed round the ſtalks without order; the branches are terminated by ſmall cluſters of purple flowers which ſtand erect, having no foot-ſtalks; the tubes of theſe flowers are longer and narrower than thoſe of the Mezereon, and the mouth is cut into four acute parts which are erect. Theſe flowers emit a pleaſant odour; they appear early in the ſpring, but do not produce ſeeds here.

The ſeventh ſort grows naturally about Montpelier; this riſes with a ſhrubby ſtalk about two feet high, dividing into many ſmall branches, which are cloſely garniſhed with narrow ſpear-ſhaped leaves growing erect, ending in acute points; the ends of the branches are terminated by panicles of flowers, which are much ſmaller than thoſe of the Mezereon, having ſwelling tubes, which are contracted at the mouth. Theſe appear in June, but are not ſucceeded by ſeeds here.

The eighth ſort grows naturally at the Cape of Good Hope; this ſhrub riſes to the height of five or ſix feet, dividing upward into ſeveral branches which grow erect, and are covered with a white bark, and cloſely garniſhed with ſmall narrow leaves, which come out on every ſide of the branches without order, ſpreading open; the tops of the branches are terminated by woolly heads, out of which the flowers come in ſmall cluſters; they are white, having oblong tubes, which are divided into four obtuſe ſegments at the mouth, which ſpread open. Theſe plants do not produce ſeeds in Europe.

The ninth ſort grows naturally in many iſlands in the Weſt-Indies, it was ſent me from Antigua. This ſhrub riſes to the height of four or five feet, with a woody ſtalk, covered with a rugged bark of an Aſh colour; the upper part of the branches are garniſhed with leaves about the ſize, and the ſame form as thoſe of Roſemary; between the leaves the flowers come out in ſmall bunches, upon foot-ſtalks an inch long; they have ſhort tubes cut into four parts at the top, and are white; theſe are ſucceeded by ſmall round berries, of a brown colour when they are ripe.

The third, fourth, and ſeventh ſorts are hardy, ſo will live through the winters in England in the open air, provided they are in a dry ſoil and a warm ſituation. The fifth and ſixth ſorts are as hardy as the common Mezereon, ſo are not in danger of being hurt by froſt in England; but they are all very difficult to keep in gardens, becauſe neither of them will bear to be tranſplanted. I have ſeveral times raiſed the plants from ſeeds, which have ſucceeded well in the places where they were ſown, but whenever they were removed, they certainly died, though performed at different ſeaſons, and with the greateſt care, and the ſame has happened to every other perſon who has raiſed any of theſe plants; and ſome of my correſpondents have aſſured me, they have frequently attempted to remove theſe plants from their natural places of growth, into their gardens, and have choſen plants of all ſizes, from the youngeſt ſeedlings to the oldeſt plants, yet have never ſucceeded in it; though they have uſed their utmoſt care, and have performed it at different ſeaſons. Therefore thoſe who are deſirous to have theſe plants in their gardens, muſt procure their ſeeds from the countries where they naturally grow; and when they arrive, they ſhould be immediately ſown where they are deſigned to remain, which for the third, fourth, and ſeventh ſorts, ſhould be on a very warm dry border, where, if there is a foundation of lime, rubbiſh, or chalk, under the upper ſurface of the ground, the plants will thrive better and continue much longer, than in better ground; and all the culture they require, is to keep the place clean from weeds, for the leſs the ground is ſtirred near their roots, the better the plants will thrive; for they naturally grow on poor ſhallow land, and out of crevices in rocks; ſo the nearer the ſoil approaches to this, the more likely the plants will be to ſucceed.

The fifth and ſixth ſorts may have a cooler ſituation; if theſe are ſown where they may have only the morning ſun, they will thrive better than in a warmer ſituation, and the ground near the roots of theſe ſhould not be diſturbed; therefore in the choice of the ſituation, there ſhould be regard had to this, not to ſow them near other plants, which may require tranſplanting, or to have the ground dug and looſened. The ſeeds of theſe plants coming from diſtant countries, rarely arrive here time enough to ſow in autumn, ſo that when they are ſown in the ſpring, the plants do not appear till the ſucceeding ſpring; and I have ſometimes had the ſeeds remain till the ſecond ſpring in the ground, before the plants have appeared; but as this may be too long for many people to leave the ground undiſturbed, ſo they had better put the ſeeds into ſmall pots of earth, and bury them in the ground the firſt ſummer, and in autumn take them up, and ſow them where they are to ſtand; by this method, the ſeeds will be forwarded to vegetate the following ſpring.

The fifth ſort is a beautiful ſweet ſhrub, ſo deſerves a place in gardens, as much as any of thoſe we cultivate for ornament. The firſt and ſecond ſorts are ſometimes uſed in medicine as was before obſerved, but being of a very cauſtic nature, are ſeldom preſcribed; but if proper trials were with caution made, it is not doubted but they may be found very efficacious in many ſtubborn diſorders, for ſome very ignorant quacks have performed great cures with theſe plants. The ſeventh ſort produces the Grana gnitida of the ſhops.

The eighth ſort grows naturally at the Cape of Good Hope, ſo will not live abroad in winter in England, but requires a good green-houſe to preſerve it. This plant is very difficult to keep or propagate in gardens.

The ninth ſort will not thrive in England, unleſs it is preſerved in the bark-ſtove; this plant will not bear tranſplanting, for I raiſed ſeveral from ſeeds which throve pretty well while they continued in the pot where they were ſown, but when they were tranſplanted, they all decayed.

DATISCA. Lin. Gen. Plant. 1003. Cannabina. Tourn. Cor. 52. Baſtard Hemp.

The CHARACTERS are,

It is male and female in different plants; the male flowers have an empalement compoſed of five narrow acute leaves; theſe have no petals, and ſcarce any viſible ſtamina, but have ten ſummits which are much longer than the empalement. The female flowers have no petals, but the empalements are the ſame as the male, having an oblong pervious germen, ſupporting three ſtyles, crowned by ſingle ſtigmas; the empalement afterward becomes an oblong triangular capſule, opening with three valves, having one cell filled with ſmall ſeeds, adhering to the three ſides of the capſule.

This genus of plants is ranged in the tenth ſection of Linnæus's twenty-ſecond claſs, intitled Dicœcia Dodecandria, from the male and female flowers growing in ſeparate plants, and the male flowers having ten ſtamina.

The SPECIES are,

1. DATISCA (*Cannabina*) caule lævi. Lin. Sp. Plant. 1037. *Datiſca with a ſmooth ſtalk.* Cannabina Cretica florifera & fructifera. Tourn. Cor. 52.
2. DATISCA (*Hirta*) caule hirſuto. Lin. Sp. Plant. 1037. *Datiſca with a rough ſtalk.*

The firſt ſort grows naturally in Crete, and ſome other eaſtern countries. This hath a perennial root, from which ariſe ſeveral herbaceous ſtalks, about four feet high, garniſhed with winged leaves placed alternately, each being compoſed of three pair of lobes, terminated by an odd one; theſe are two inches long and half an inch broad, ending in acute points, and are deeply ſawed on their edges, of a light green. The flowers come out in long looſe ſpikes from the upper part of the ſtalks at the wings of the leaves, but having no petals, make but a poor appearance. The ſummits of the male flowers being pretty long, and of a bright yellow colour, are the only viſible parts of the flowers to be diſcerned at any diſtance.

The flowers on the female plants are ſucceeded by oblong three-cornered capſules, filled with ſmall ſeeds, which adhere to the three valves. The plants flower in June, and the ſeeds ripen in September. The ſtalks decay in autumn and new ariſe in ſpring.

This ſort may be propagated by parting the roots, which ſhould be performed in autumn when the ſtalks decay, (which is the beſt time to tranſplant the roots), but they muſt not be parted too ſmall; they may be planted in any open beds, where they are not under the drip of trees, and will require no other culture but to keep them clean from weeds.

It may alſo be propagated by ſeeds, but theſe ſhould be taken from ſuch plants as grew in the neighbourhood of male plants, otherwiſe they will not ſucceed; and if the ſeeds are not ſown in autumn, they ſeldom grow the firſt year. The ſeedling plants when they riſe, will require no other care but to keep them clean from weeds till autumn, when they may be tranſplanted where they are to grow.

The ſecond ſort grows naturally in Canada, and other parts of North America. This differs from the former, in having hairy ſtalks, which grow taller; the leaves are larger, and do not ſtand ſo near each other upon the ſtalks. It is equally hardy with the firſt ſort, and may be propagated in the ſame manner, but ſhould have a more ſhady ſituation and a moiſter ſoil.

DATURA. Lin. Gen. Plant. 218. Stramonium. Tourn. Inſt. R. H. 118. Thorn Apple.

The CHARACTERS are,

The flower is of one petal which is funnel-ſhaped, having a long cylindrical tube, ſpreading open at the top, which in ſome ſpecies is pentangular, each angle being pointed; the empalement of the flower is permanent, ſwelling in the middle, five-cornered, and tubulous; the flower hath five ſtamina, which are as long as the empalement, terminated by oblong compreſſed ſummits; it hath an oval germen, ſupporting an upright ſtyle, crowned by a thick obtuſe ſtigma. The germen afterward becomes an oval capſule, divided into four cells by a croſs intermediate partition, which are filled with kidney-ſhaped ſeeds adhering to the partition.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. DATURA (*Stramonium*) pericarpiis ſpinoſis erectis ovatis, foliis ovatis glabris. Hort. Cliff. 55. *Datura with an oval erect fruit having a prickly cover.* Stramonium fructu ſpinoſo rotundo, flore albo ſimplici. Tourn. Inſt. R. H. 118. *Thorn Apple with a round prickly fruit, and a ſingle white flower.*
2. DATURA (*Tatula*) pericarpiis ſpinoſis erectis ovatis, foliis cordatis glabris dentatis. Lin. Sp. 256. *Datura with an erect oval fruit with a prickly cover, and ſmooth, heart-ſhaped, indented leaves.* Stramonium fructu ſpinoſo oblongo, flore violaceo. Tourn. Inſt. R. H. 119. *Thorn Apple with an oblong prickly fruit, and a Violet-coloured flower.*
3. DATURA (*Metel*) pericarpiis ſpinoſis nutantibus globoſis, foliis cordatis ſubintegris pubeſcentibus. Hort. Cliff. 55. *Datura with a globular nodding fruit having a prickly cover, and heart-ſhaped, entire, hairy leaves.* Datura alba. Rump. 5. p. 242.
4. DATURA (*Ferox*) pericarpiis ſpinoſis erectis ovatis, ſpinis ſupremis maximis convergentibus. Amœn. Acad. 3. p. 403. *Datura with an oval erect fruit, whoſe upper ſpines are largeſt, and converge together.* Stramonium ferox. Bocc. 50. *Rough Thorn Apple.*
5. DATURA (*Inoxia*) pericarpiis ſpinoſis inoxiis ovatis propendentibus, foliis cordatis pubeſcentibus. *Datura with an oval hanging fruit, whoſe cover is beſet with harmleſs ſpines, and heart-ſhaped hairy leaves.* Stramonium folio hyoſcyami, flore toto candido, fructu propendente rotundo, ſpinis inoxiis ornato. Boerh. Ind. alt. 1.
6. DATURA (*Faſtuoſa*) pericarpiis tuberculoſis nutantibus globoſis, foliis lævibus. Lin. Sp. 256. *Datura with a globular nodding fruit, whoſe cover is ſet with tubercles and ſoft leaves.* Stramonium Ægyptiacum flore pleno, intus albo, foris violaceo. Tourn. Inſt. 119. *Egyptian Thorn Apple with a double flower, white on the inſide, and Violet-coloured on the outſide.*
7. DATURA (*Arborea*) pericarpiis inermibus nutantibus, caule arboreo. Lin. Sp. Plant. 179. *Datura with a nodding fruit having an unarmed cover, and a tree-like ſtalk.* Stramonioides arboreum, oblongo & integro folio, fructu lævi, vulgò. Flori pondio. Feuil. tab. 46.

The firſt ſort here enumerated is the moſt common Thorn Apple in Europe, and was probably firſt introduced from Italy or Spain, where it naturally grows; but it is now become ſo common about London, and near other great towns in England, as to appear like a native plant; for there are few gardens or dunghills without this plant in ſummer, though it is only near ſuch places, where the plants may have been cultivated firſt in the gardens; and wherever any of theſe plants are permitted to ſeed, they will furniſh a ſupply of the plants for ſome years to come, as they produce a vaſt quantity of ſeeds, ſome of which will lie years in the ground, and when they are turned up to the air will vegetate.

This ſort ſeldom grows much more than two feet high, dividing into many ſtrong irregular branches which are hollow, garniſhed with large ſmooth leaves divided into irregular angles, and emit a fœtid odour. The flowers come out firſt from the forks or diviſions of the branches, and afterward near the extremities of the branches; they have long ſwelling tubes, which are dilated at the top into large pentagonal brims, each angle ending in a long point or ligula; theſe ſtand in long, green, five-cornered empalements, and are ſucceeded by large roundiſh ſeed-veſſels, covered with ſtrong thorns, divided by four furrows, to which adhere the partitions, which ſeparate the four cells, filled with black kidney-ſhaped ſeeds. It flowers in July, Auguſt, and September, and the ſeeds ripen

in autumn, which, if permitted to ſcatter, will fill the ground about them with plants the following years. There was formerly a cooling ointment made with the leaves of this plant and hogs lard, which was greatly eſteemed for burns and ſcalds.

There is a variety (if not a diſtinct ſpecies of this) which grows naturally in North America; the plants of this grow more than twice the ſize of the former; the leaves are ſmoother, and of a lucid green, but the flowers and fruit are of the ſame form as thoſe of the other, ſo may be deemed a diſtinct ſpecies, eſpecially as the difference continues in the plants propagated in England.

The ſecond ſort grows naturally in moſt parts of America, for I have frequently received the ſeeds of it from the iſlands in the Weſt-Indies, and alſo from all the northern parts of America. This riſes with a purple ſtrong ſtalk to the height of four or five feet, dividing into many ſtrong branches, garniſhed with leaves ſhaped ſomewhat like thoſe of the former ſort, but larger, and have a greater number of angles and lacinæ on their edges; the flowers have longer and narrower tubes, and are of a purple colour; the fruit is alſo longer, and theſe differences are permanent. This is equally hardy with the former, and if the ſeeds are permitted to ſcatter, the plants will become troubleſome weeds. The third ſort hath a ſtrong ſtem, which riſes three feet high, and divides into many woolly branches; the leaves of this ſort are almoſt entire, having only two or three ſlight indentures on their edges; the flowers have long tubes, which extend beyond the bifid empalement, then they ſpread out very broad, where the brim is divided into ten obtuſe angles; they are of a pure white above, but the tubes have a tincture of green within. Theſe are ſucceeded by roundiſh fruit, cloſely covered with thorns, and are divided into four cells as the other, but the ſeeds of this are of a light brown colour when ripe.

This plant is not ſo hardy as the others, ſo the ſeeds muſt be ſown upon a gentle hot-bed in the ſpring, and the plants muſt be afterward treated in the ſame manner as the Marvel of Peru, and other of the hardier kinds of annual plants, and may be tranſplanted into the full ground the latter end of May. They will flower in July, and the ſeeds will ripen in autumn.

There is a variety of this with double flowers, but unleſs the plants of this are placed in a glaſs-caſe, they will not produce ſeeds in this country.

The fourth ſort is of humbler growth, ſeldom riſing more than a foot and a half high, ſpreading out into many branches, which are garniſhed with leaves ſomewhat like thoſe of the firſt ſort, but are ſmaller, and ſtand upon longer foot-ſtalks; the flowers are like thoſe of the firſt ſort, but ſmaller; the fruit is round, and armed with very ſtrong ſharp thorns, the upper being large, and converge toward each other. The ſeeds of this are black when ripe.

This ſort is too tender to be ſown in the full ground in England, ſo the plants ſhould be raiſed on a hot-bed, and afterward tranſplanted into borders as the former ſort.

The fifth ſort grows naturally at La Vera Cruz, from whence I received the ſeeds. This riſes with a purpliſh ſtem three or four feet high, dividing into ſeveral ſtrong branches, garniſhed with oblong heart-ſhaped leaves. The ſtalks, branches, and leaves of this ſort are covered with ſoft hairs; the flowers come out at the diviſion of the ſtalks and branches, ſtanding erect; they are large, white, and are ſucceeded by oval fruit, covered with long, ſoft, innocent ſpines, opening in four cells, which are full of brown ſeeds.

This plant is annual, and ſhould be firſt raiſed on a moderate hot-bed, then may be tranſplanted into open borders, where it will flower and perfect its ſeeds in the autumn. If theſe ſeeds are permitted to ſcatter, the plants will riſe the following ſpring, and if the ſummer proves warm, they will flower and often perfect their ſeeds.

The ſixth ſort grows naturally in Egypt, and alſo in India. This riſes with a fine poliſhed purple ſtalk four

feet high, dividing into ſeveral branches, which are garniſhed with large, ſmooth, ſinuated leaves, ſtanding upon pretty long foot-ſtalks. The flowers are produced at the diviſions of the branches; theſe have large ſwelling tubes, which expand very broad at the top, their brims being divided into ten angles, each ending with a long ſlender point. The flowers are of a beautiful purple on their outſide, and a ſattiny white within; ſome of theſe are ſingle, others have two or three flowers ſtanding one within another, and ſome are double, having four or five petals within each other of equal length, ſo as to appear a full flower at the brim; they have an agreeable odour at firſt, but if long ſmelt to, become leſs agreeable, and are narcotic. If theſe plants are brought forward upon a hot-bed in the ſpring, and in June planted out on a warm border of rich earth, they will flower very finely in July and Auguſt; but unleſs they are covered with glaſſes, the ſeeds ſeldom ripen well in England. The fruit of this ſort is round, and grows nodding downward; the ſeed-veſſel is thick and fleſhy, as are alſo the intermediate partitions which divide the cells. The outſide of the fruit is covered with blunt protuberances, and the ſeeds are of a bright brown colour when ripe.

The ſeventh ſort was ſent me from La Vera Cruz by the late Dr. Houſtoun, who found it growing there naturally. This riſes with a woody ſtalk to the height of twelve or fourteen feet, dividing into ſeveral branches, which are garniſhed with oblique leaves ſix inches long, and two inches and a half broad in their broadeſt part, growing narrower at each end; they are oblique to the foot-ſtalk, which ſtands nearer to one ſide than the other; they are downy, and ſtand upon long foot-ſtalks. The flowers come out at the diviſion of the branches; theſe have a looſe tubular empalement near four inches long, which opens at the top on one ſide like a ſpatha or ſheath, within the empalement; the tube of the flower is narrow, but immediately above it ſwells very large for near ſix inches in length, then ſpreads open at the brim, where it is divided into five angles, which terminate in very long points; they are white, with ſome longitudinal ſtripes, of a pale yellow on their outſide; theſe are ſucceeded by round ſmooth capſules, filled with kidney-ſhaped ſeeds.

This tree is one of the greateſt ornaments to the gardens in Chili, where the inhabitants propagate it with great care. When the flowers are fully blown, they make a fine appearance, and a ſingle tree will perfume the air of a large garden.

This plant is tender, ſo requires to be kept in a ſtove in England. The ſeeds of this muſt be procured from the places where the trees naturally grow; they ſhould be perfectly ripe when gathered, and carefully put up, ſo as that the vermin cannot get to them, for they will deſtroy them. Moſt of the ſeeds which were ſent over by Dr. Houſtoun, were devoured in their paſſage by inſects, ſo that but few plants were raiſed. There were two or three of them raiſed in the gardens of the late Lord Petre, and two in the Chelſea garden; one of which came ſo far as to flower, but periſhed without producing ſeeds, ſo that at preſent I believe there is not any of the plants in England.

DAUCUS. Lin. Gen. Plant. 296. Tourn. Inſt. R. H. 307. tab. 161. [δαῦκος, which ſome derive of δαίω, *Gr.* to burn, of its ſharp and fiery power, or fervent taſte.] The Carrot.

The CHARACTERS are,

It hath an umbelliferous flower; the principal umbel is compoſed of a great number of ſmall ones called rays, which are ſhort, and in cluſters. The involucrum of the principal umbel is compoſed of many narrow leaves, having winged points; theſe are ſcarce ſo long as the umbel; thoſe of the rays are ſhorter and ſimple. The flowers have five heart-ſhaped petals which turn inward; thoſe which compoſe the rays are unequal in ſize, but thoſe of the diſk are nearly ſo; theſe have each five hairy ſtamina, terminated by roundiſh ſummits. The germen ſits under the flower, ſupport-

ſupporting two reflexed ſtyles, crowned by obtuſe ſtigmas. The germen afterward becomes a ſmall, roundiſh, ſtriated fruit, dividing in two parts, each having a ſingle ſeed, convex and furrowed on one ſide, and plain on the other.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. DAUCUS (*Sylveſtris*) ſeminibus hiſpidis, radice tenuiore fervido. *Carrot with a prickly ſeed, and a ſlender hot root.* Daucus vulgaris. Cluſ. Hiſt. 2. p. 198. *Common wild Carrot.*
2. DAUCUS (*Carota*) ſeminibus hiſpidis, radice carnoſo eſculento. *Carrot with a prickly ſeed, and a fleſhy eatable root.* Daucus ſativus, radice aurantii coloris. Tourn. Inſt. R. H. 307.
3. DAUCUS (*Gingidium*) radiis involucri planis, laciniis recurvis. Prod. Leyd. 97. *Carrot with plain rays to the involucrum, and recurved jags.* Daucus montanus lucidus. Tourn. Inſt. 307. *Shining maritime Carrot.*
4. DAUCUS (*Hiſpidus*) caule hiſpido, ſegmentis foliorum latioribus. *Carrot with a prickly ſtalk, and broader ſegments to the leaves.* Paſtinaca Oenanthes folio. Bocc. Rar. Pl. 75. *Parſnep with a Water Dropwort leaf.*
5. DAUCUS (*Creticus*) radiis involucri pinnatifidis, umbellis duplo longioribus, foliolis acutis. *Carrot with wing-pointed rays to the involucrum, which are twice the length of the umbel, and acute leaves.* Daucus tenuifolius Creticus, radiis umbellæ longioribus. Tourn. Inſt. R. H. 308. *Narrow-leaved Carrot of Crete, with rays longer than the umbel.*
6. DAUCUS (*Mauritanicus*) ſeminibus hiſpidis, floſculo centrali ſterili carnoſo, receptaculo communi hemiſphærico. Lin. Sp. 348. *Carrot with hiſpid ſeeds, the central flower barren, and the common receptacle hemiſpherical.* Daucus Hiſpanicus, umbella magna. Tourn. Inſt. 308.
7. DAUCUS (*Viſnaga*) ſeminibus nudis. Hort. Cliff. 89. *Carrot having naked ſeeds.* Gingidium umbella oblongâ. C. B. P. 151. *Gingidium with an oblong umbel.*
8. DAUCUS (*Muricatus*) ſeminibus aculeatus. Lin. Sp. 349. *Carrot with prickly ſeeds.* Caucalis major Daucoides Tingitana. Mor. Hiſt. 3. p. 308.

The firſt ſort is the common wild Carrot, which grows by the ſide of fields, and in paſture grounds in many parts of England. The plants of this ſort do not differ greatly in appearance from the Garden Carrot, which has led ſome perſons into an opinion of their being the ſame plant; but thoſe who have attempted to cultivate the wild ſort, are fully convinced of their being diſtinct plants. I have tried to cultivate the wild ſort for many years, but could never get the ſeeds which were ſown in the ſpring to grow, upon which I ſowed the ſeeds in autumn, part of which have come up well; theſe plants I cultivated in the ſame manner as the Garden Carrot, but could not improve the roots in the leaſt, for they continued to be ſmall, ſticky, and of a hot biting taſte; and this has been always the caſe, wherever the plants have been ſown, therefore there can be no doubt of their being different plants. The ſeeds of this ſort are uſed in medicine, and are eſteemed good to bring away gravel: it is an excellent diuretic, but inſtead of theſe ſeeds, the ſhops are uſually ſupplied with old ſeeds of the Garden Carrot, when they have loſt their vegetative quality, then the ſeedſmen ſell them to the druggiſts for medicinal uſe; but certainly all ſeeds which are too old to grow, can have little virtue remaining in them.

There are ſeveral varieties of the Garden Carrots, which differ in the colour of their roots, and theſe variations may be continued, where there is proper care taken not to mix the different ſorts together in the ſame garden; but the Orange Carrot is generally eſteemed in London, where the yellow and the white Carrots are ſeldom cultivated.

The dark red, or purple Carrot, I take to be a diſtinct ſort from either of theſe; but as it is much tenderer, I have not had an opportunity of ſeeing it in the flower, for the roots were all deſtroyed by the firſt froſts in autumn. The ſeeds of this ſort were ſent me from Aleppo, which ſucceeded very well; the roots were not ſo large as thoſe of the other ſorts of Carrots, and were of a purple colour, very like that of a deep-coloured Radiſh; they were very tender and ſweet; the leaves were finer cut than thoſe of the common Carrot, and were leſs hairy.

The ſecond ſort is commonly cultivated in gardens for the kitchen, and the different varieties of it are, in ſome places, eſteemed, though in London, the Orange Carrot is preferred to all the other.

They are propagated at two or three different ſeaſons, or ſometimes oftener, where people are fond of young Carrots, whenever they can be procured. The firſt ſeaſon for ſowing the ſeeds is ſoon after Chriſtmas, if the weather is open, which ſhould be in warm borders, near walls, pales, or hedges, but they ſhould not be ſown immediately cloſe thereto; but a border of Lettuce, or other young ſallad herbs, of about a foot wide, ſhould be next the wall, &c. for if the Carrots were ſown cloſe to the wall, they would draw up weak, without making any tolerable roots.

Theſe delight in a warm ſandy ſoil which is light, and ſhould be dug pretty deep, that the roots may the better run down; for if they meet with any obſtruction, they are very apt to grow forked, and ſhoot out lateral roots, eſpecially where the ground is too much dunged the ſame year that the ſeeds are ſown, which will alſo occaſion their being worm-eaten; it is therefore the better method to dung the ground intended for Carrots the year before they are ſown, that it may be conſumed, and mixed with the earth; but in ſuch places where there has not been ground ſo prepared the year before, and there may be a neceſſity for dunging it the ſame year as the Carrots are ſown, the dung ſhould be well rotted which is laid upon it, and ſhould be thinly ſpread over the ground; and in the digging of it into the ground, great care ſhould be taken to diſperſe it all through the ground, and not to bury it in heaps, for that will ſtop the roots of the Carrots in their downright growth, and cauſe them to be ſhort and forky. Where the ground is inclinable to bind, there cannot be too much care taken to break and divide the parts; therefore in digging the land for Carrots, there ſhould never be large ſpits taken, but they muſt be very thin, and the clods well broken; which, if not attended to by the maſter, is ſeldom properly performed by workmen, who are too apt to hurry over their work, if they are not well obſerved.

The ground when dug ſhould be laid level and even, otherwiſe when the ſeeds are ſown and the ground is raked over, part of the ſeeds will be buried too deep, and others will be in danger of being drawn up into heaps; ſo the plants will come up in bunches, and other parts of the ground be naked, which ſhould always be carefully avoided.

The ſeeds have a great quantity of ſmall forked hairs upon their borders, by which they cloſely adhere, ſo that they are difficult to ſow even, ſo as not to come up in patches; you ſhould therefore rub it well through both hands, whereby the ſeed will be ſeparated before it is ſown; then you ſhould chooſe a calm day to ſow it in, for if the wind blows, it will be impoſſible to ſow it equal, for the ſeeds being very light, will be blown into heaps. When the ſeed is ſown, you ſhould tread the ground pretty cloſe with your feet, that it may be buried, and then rake the ground level.

When the plants are come up and have got four leaves, you ſhould hoe the ground with a ſmall hoe about three inches wide, cutting down all young weeds, and ſeparating the plants to four inches diſtance each way, that they may get ſtrength; and in about a month or five weeks after, when the weeds begin to grow again, you ſhould hoe the ground over a ſecond time, in which you ſhould be careful not to leave two Carrots cloſe to each other, as alſo to ſeparate them to a greater diſtance, cutting down all weeds, and ſlightly ſtirring the ſurface of the ground in every

place, the better to prevent young weeds from ſpringing, as alſo to facilitate the growth of the young Carrots.

In about a month or five weeks after, you muſt hoe them a third time, when you muſt clear the weeds as before; and now you ſhould cut out the Carrots to the diſtance they are to remain, which muſt be proportioned to the ſize you intend to have them grow. If they are to be drawn while young, five or ſix inches aſunder will be ſufficient, but if they are to grow large before they are pulled up, they ſhould be left eight or ten inches diſtant every way; you muſt alſo keep them clear from weeds, which, if ſuffered to grow amongſt the Carrots, will greatly prejudice them.

The ſecond ſeaſon for ſowing theſe ſeeds is in February, on warm banks, ſituated near the ſhelter of a wall, pale, or hedge; but thoſe which are intended for the open large quarters, ſhould not be ſown before the beginning of March, nor ſhould you ſow any later than the end of the ſame month; for thoſe which are ſown in April or May, will run up to ſeed before their roots have any bulk, eſpecially if the weather ſhould prove hot and dry.

In July you may ſow again for an autumnal crop, and at the end of Auguſt you may ſow ſome to ſtand the winter; by which method you will have early Carrots in March, before the ſpring ſowing will be fit to draw; but theſe are ſeldom ſo well taſted, and are often very tough and ſticky. However, as young Carrots are generally expected early in the ſpring, moſt people ſow ſome at this ſeaſon; but theſe ſhould be ſown upon warm borders and dry land, otherwiſe they are ſeldom good. If the winter ſhould prove very ſevere, it will be proper to cover the young Carrots with Peaſe-haulm, the haulm of Aſparagus, or ſome ſuch light covering, to prevent the froſt from penetrating into the ground, which often deſtroys the Carrots, where this care is wanting: but if in very hard winters the Carrots ſhould be all deſtroyed which were ſown in autumn, there ſhould be a hot-bed made early in the ſpring to ſow ſome, which will be fit for uſe long before any that are ſown in the full ground; but theſe beds ſhould be earthed fifteen or ſixteen inches deep, that the roots may have a proper depth of ſoil to run down. If theſe beds are lined with hot dung twice, at ſuch times when the heat of the beds decline, it will greatly forward the growth of the Carrots, but there ſhould be great care taken not to draw the plants up too weak; theſe may be allowed to grow cloſer together than thoſe ſown in the full ground, becauſe they will be drawn for uſe very young. Many people mix ſeveral other ſorts of ſeeds, as Leek, Onion, Parſnep, Radiſh, &c. amongſt their Carrots; and others plant Beans, &c. but, in my opinion, neither of theſe methods are good; for, if there is a full crop of any one of theſe plants, there can be no room for any thing elſe amongſt them, ſo that what is got by one is loſt by another; and beſides, it is not only more ſightly, but better, for the plants of each kind to be ſown ſeparate; and alſo by this means your ground will be clear, when the crop is gone, to ſow or plant any thing elſe; but when three or four kinds are mixed together, the ground is ſeldom at liberty before the ſucceeding ſpring: beſides, where Beans, or any other tall-growing plants are planted amongſt the Carrots, they are apt to make them grow more in top than root; ſo that they will not be half ſo large as if ſown ſingly, without any other plants amongſt them.

The covetouſneſs of ſome gardeners will not permit them to cut out their Carrots to a proper diſtance when they hoe them, ſo that by leaving them cloſe, they draw each other up weak: and if they are drawn while young, they never recover their ſtrength afterward ſo perfectly, as to grow near the ſize of thoſe which are properly thinned at the firſt hoeing; therefore where the Carrots are deſigned to have large roots, they muſt never ſtand too cloſe, nor ſhould they have any other crop mixed with them.

This root has been long cultivated in gardens for the table, but has not till of late years been cultivated in the fields for cattle, nor has it been practiſed as yet but in few parts of England; it is therefore greatly to be wiſhed, that the culture of it was extended to every part of England, where the ſoil is proper for the purpoſe; for there is ſcarce any root yet known, which more deſerves it, being a very hearty good food for moſt ſorts of animals. One acre of Carrots, if well planted, will fatten a greater number of ſheep or bullocks, than three acres of Turneps, and the fleſh of theſe animals will be firmer and better taſted. Horſes are extremely fond of theſe roots, and for hogs there is not any better food. I have alſo known theſe roots cultivated for feeding of deer in parks, which has proved of excellent uſe in hard winters, when there has been a ſcarcity of other food; at which times great numbers of deer have periſhed for want, and thoſe which have eſcaped, have been ſo much reduced, as not to recover their fleſh the following ſummer; whereas, thoſe fed with Carrots have been kept in good condition all the winter, and upon the growth of the graſs in the ſpring, have been fat early in the ſeaſon, which is an advantage, where the graſs is generally backward in its growth.

There is alſo an advantage in the cultivation of this root beyond that of the Turnep, becauſe the crop is not ſo liable to fail; for as the Carrots are ſown in the ſpring, the plants generally come up well, and unleſs the months of June and July prove very bad, there is no danger of the crop ſucceeding; whereas Turneps are frequently deſtroyed by the flies at their firſt coming up, and in dry autumns they are attacked by caterpillars, which in a ſhort time devour whole fields, but Carrots are not attacked by theſe vermin: therefore every farmer who has a ſtock of cattle or ſheep, ſhould always have a ſupply of theſe roots, if he has land proper for the purpoſe, which muſt be light, and of a proper depth to admit of the roots running down.

In preparing the land for Carrots, if it has not been in tillage before, it ſhould be ploughed early in autumn, and then ploughed acroſs again before winter, laying it up in high ridges to mellow by the froſt; and if the ground is poor, there ſhould be ſome rotten dung ſpread over it in winter, which ſhould be ploughed in about the beginning of February; then in March, the ground ſhould be ploughed again to receive the ſeeds; in the doing of which, ſome farmers have two ploughs, one following the other in the ſame furrow, ſo that the ground is looſened a foot and a half deep. Others have men with ſpades following the plough in the furrows, turning up a ſpit of earth from the bottom, which they lay upon the top, levelling it ſmooth and breaking the clods; the latter method is attended with a little more expence, but is much to be preferred to the firſt, becauſe in this way the clods are more broken, and the ſurface of the ground is laid much evener.

If the land has been in tillage before, it will require but three ploughings; the firſt juſt before winter, when it ſhould be laid in high ridges for the reaſons before given; the ſecond croſs ploughing ſhould be in February, after which, if it is well harrowed to break the clods, it will be of great ſervice; the laſt time muſt be in March to receive the ſeeds, this ſhould be performed in the manner before mentioned. After this third ploughing, if there remain great clods of earth unbroken, it will be proper to harrow it well before the ſeeds are ſown. One pound and a half of ſeeds will be ſufficient for an acre of land, but as they are apt to adhere together, it renders them more difficult to ſow even than moſt other ſorts; therefore ſome mix a quantity of dry ſand with their ſeeds, rubbing them well together, ſo as to ſeparate the Carrot ſeeds from each other, which is a good method. After the ſeeds are ſown, they muſt be gently harrowed in to bury them; and when the plants come up, they ſhould be hoed in the manner before directed.

But in order to preſerve your Carrots for uſe all the winter and ſpring, you ſhould, about the beginning of November, when the green leaves are decayed, dig them up, and lay them in ſand in a dry place, where the froſt cannot come to them, taking them out from time to time as you have occaſion for them, reſerving ſome of the longeſt and ſtraiteſt roots for ſeed, if you intend to ſave any; which roots ſhould be planted in the middle of February, in a light ſoil, about a foot aſunder each way, obſerving to keep the ground clear from weeds; and about the middle of Auguſt, when you find the ſeeds are ripe, you muſt cut it off, and carry it to a dry place, where it ſhould be expoſed to the ſun and air for ſeveral days to dry; then you may beat out the ſeeds, and put it up in bags, keeping it in a dry place until you uſe it. This ſeed is ſeldom eſteemed very good after the firſt or ſecond year at moſt, but new ſeed is always preferred, nor will it grow when it is more than two years old.

The third ſort grows naturally about Montpelier; this hath ſmoother ſtalks than the common Carrot, the ſegments of the leaves are broader, and of a lucid green; the umbels of the flowers are larger, and not ſo regular. This is an annual plant, but it ſucceeds beſt when ſown in autumn.

The fourth ſort is of lower growth than either of the former; the ſtalks are cloſely covered with ſhort prickles, the ſegments of the leaves are broad and obtuſe, the umbels are ſmall, and the involucrum is longer than the umbel, and the leaves are trifid which compoſe it.

The fifth ſort riſes with a ſlender, rough, hairy ſtalk upward of two feet high; the leaves are ſhort, and have a few ſmall ones intermixed, which are thinly placed, and cut into acute ſegments; the umbels are not ſo large as thoſe of the common ſort, and the involucrum is twice the length of the umbel; the leaves which compoſe it are divided into five or ſeven parts, ending in acute points; the flowers are yellow.

The ſixth ſort hath a channelled ſtalk riſing near three feet, which is terminated by large umbels of flowers, with a wing-pointed involucrum; the ſegments of the lower leaves are cut into obtuſe ſegments, and are of a deep green colour.

The ſeventh ſort is an annual plant, which grows naturally in Spain and Italy; this riſes with an upright, ſmooth, channelled ſtalk three feet high, garniſhed with ſmooth leaves, which are divided into many fine narrow ſegments like thoſe of Fennel; the ſtalks branch out upward, and each branch is terminated by a large umbel, compoſed of a great number of ſmall ones; the involucrum is ſhorter than the umbel, and each of the leaves which compoſe it is trifid: the foot-ſtalks which ſuſtain the ſmall umbels (or rays) are long and ſtiff; theſe are by the Spaniards uſed for picking their teeth, from whence the plant had the title of Viſnaga, or Pick-tooth. The ſeeds of this plant ſhould be ſown in autumn, for thoſe which are ſown in the ſpring frequently fail, or at leaſt remain in the ground till next year before they grow; the plants require no other culture but to keep them clean from weeds, and thin them where they are too cloſe.

The eighth ſort grows naturally about Tangier. This riſes with an upright ſtalk above two feet high, garniſhed with double-winged leaves which are hairy; the ſtalk branches upward into ſeveral diviſions, each being terminated by an umbel of white flowers, which are ſucceeded by prickly ſeeds.

If the ſeeds of this ſort are not ſown in the autumn, the plants rarely perfect their ſeeds in this country; for when they are ſown in the ſpring, and the plants come up ſoon after, they generally run up to ſeed in autumn, ſo that the froſts come on before they have time to ripen.

Theſe ſorts are ſometimes preſerved in botanic gardens for the ſake of variety, but being of no uſe, are not cultivated in other gardens.

DAUCUS CRETICUS. See ATHAMANTA.

D'AYENIA, Monier.

This genus of plants receives its title from Monſeigneur Le Duc D'Ayen, who is a great lover and promoter of the ſcience of botany; and has a noble garden at St. Germains, which is well ſtored with rare plants from many different parts of the world, and has appointed Dr. Monier, member of the Royal Academy of Sciences, the ſuperintendent of it.

The CHARACTERS are;

It hath an empalement compoſed of five ſmall oval leaves which are dry. The flower hath five petals, whoſe points are united to a plain ſtarry nectarium; the nectarium ſits upon a cylindrical column which is erect, and the length of the empalement; it is bell-ſhaped, having five depreſſed lobes at the margin: it hath five ſhort ſtamina inſerted into the border of the nectarium, terminated by roundiſh ſummits, which are joined to the border of the petals. It hath a roundiſh germen in the bottom of the nectarium, ſupporting a cylindrical ſtyle, crowned by a five-cornered obtuſe ſtigma. The capſule hath five cells, incloſing five oblong ſeeds faſtened to the capſule.

This genus of plants is ranged in the fourth ſection of Linnæus's twentieth claſs, intitled Gynandria Pentandria, the flowers having five ſtamina, which are faſtened with the ſtyle to the nectarium.

We at preſent know but one SPECIES of this genus, viz.

D'AYENIA (*Puſilla*) foliis cordatis glabris. Lin. Sp. 1354. *D'Ayenia with heart-ſhaped ſmooth leaves.*

The ſeeds of this plant were ſent by the younger De Juſſieu from Peru to Paris, where they ſucceeded, and have ſince been communicated to many other gardens in Europe. I received the ſeeds from Dr. Monier, intendent of the garden of the Duke D'Ayen at St. Germains, which have for ſome years grown in the Chelſea garden, where the plants annually flower and perfect their ſeeds.

This plant hath a weak ligneous ſtalk, which divides into ſeveral ſlender branches, riſing from nine inches to a foot high, garniſhed by heart-ſhaped ſmooth leaves, which are ſlightly indented on their edges, ſtanding upon pretty long foot-ſtalks; they are of a lucid green, and end in acute points, placed alternately on the branches. At the baſe of each foot-ſtalk, from the ſide of the branches, come out the flowers, two, three, or four, ariſing from the ſame point, each ſtanding upon a ſeparate ſlender foot-ſtalk; they have five ſlender ſtamina, collected into a ſort of column, like the malvaceous flowers, having a five-cornered germen at the bottom, which afterward becomes a roundiſh five-cornered capſule, having five cells, in each of theſe is lodged one kidney-ſhaped ſeed. The flowers are tubulous, ſpreading open at the top, where they are cut into five acute ſegments, each being terminated by a ſlender tail; they are purple, and continue in ſucceſſion on the ſame plants from July to the winter.

This plant is propagated by ſeeds, which ſhould be ſown upon a moderate hot-bed early in the ſpring; and when the plants are come up, and have four leaves, they ſhould be tranſplanted on a freſh hot-bed to bring them forward; part of them may be planted in ſmall pots, and the others may be planted on the bed: thoſe in the pots ſhould be plunged into a hot-bed of tanners bark; they muſt be ſhaded till they have taken new root, then they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon; they require to be frequently watered in warm weather, but they ſhould not have it in too great plenty. The plants ſhould continue all the ſummer in the hot-bed, where they muſt have a good ſhare of air; for thoſe which are fully expoſed to the open air will not thrive, and if they are too much drawn, they do not flower well. The plants will live through the winter in a moderate ſtove, but as they perfect their ſeeds well the firſt year, few perſons care to continue the old plants. There is a figure of this plant exhibited in the 118th plate of our figures of plants.

DAY-LILY. See HEMEROCALLIS.

DECORTICATION, is the pulling off the outward bark of trees, alſo the peeling or barking of roots.

DELPHINIUM. Lin. Gen. Plant. 602. Tourn. Inſt. R. H. 426. tab. 241. [Δελφὶν, *Gr.* a dolphin; ſo called, becauſe the flower, before it opens, reſembles a dolphin. It is called Conſolida Regalis, from its conſolidating virtue. Caſpar Bauhin calls it the Royal Plant, becauſe it has its cup turned backwards, like a nobleman's badge. Cæſalpinus, Pliny, and the poets ſay, this plant is the true Hyacinth, becauſe it has the ſyllable ai inſcribed on its flower, which is a particle of bewailing,] Larkſpur, or Larkſheel.

The CHARACTERS are,

The flower hath no empalement; it is compoſed of five unequal petals placed circularly; the upper petal is extended at the hinder part into a tubular obtuſe tail; the two ſide petals are nearly of the ſame ſize with the upper, but the two lower are ſmaller; theſe ſpread open. There is a bifid nectarium ſituated in the center of the petals, and is involved in the tube by the back part. The flower hath many ſmall ſtamina which incline to the petals, and are terminated by ſmall erect ſummits; it hath three oval germen, ſupporting three ſtyles which are as long as the ſtamina, crowned by reflexed ſtigmas; the germen afterward become ſo many capſules joined together, which open croſſways, each having one cell filled with angular ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's thirteenth claſs, intitled Polyandria Trigynia, the flower having many ſtamina and three ſtyles

The SPECIES are,

1. DELPHINIUM (*Conſolida*) nectariis monophyllis, caule ſubdiviſo. Hort. Cliff. 217. *Larkſpur with a one-leaved nectarium and a divided ſtalk.* Delphinium ſegetum. Tourn. Inſt. 426. *Corn Larkſpur, and the* Conſolida regalis arvenſis. C. B. P. 142. *Field Royal Conſound.*
2. DELPHINIUM (*Ajacia*) nectariis monophyllis, caule ſimplici. *Larkſpur with a one-leaved nectarium, and an erect ſtalk.* Delphinium hortenſe, flore majore & ſimplici cæruleo. Tourn. Inſt. R. H. 426. *Garden Larkſpur, with a larger ſingle blue flower.*
3. DELPHINIUM (*Ambiguum*) nectariis monophyllis, caule ramoſo. *Larkſpur with a one-leaved nectarium and a branching ſtalk.* Delphinium elatius purpuro violaceum. Suvert. Flor. *Branched Larkſpur.*
4. DELPHINIUM (*Peregrinum*) nectariis diphyllis corollis enneapetalis capſulis teretis, foliis multipartitis obtuſis. Hort. Cliff. 213. *Larkſpur with a two-leaved nectarium, a flower with eleven petals and three capſules, and leaves divided into many obtuſe ſegments.* Delphinum latifolium, parvo flore. Tourn. Inſt. R. H. 426. *Broad-leaved Larkſpur with a ſmall flower.*
5. DELPHINIUM (*Elatum*) nectariis diphyllis, labellis bifidis, apice barbatis, foliis inciſis, caule erecto. Hort. Upſal. 151. *Larkſpur with a two-leaved nectarium, a bifid lip bearded at the top, cut leaves, and an erect ſtalk.* Delphinium perenne montanum villoſum, aconiti folio. Tourn. Inſt. 426. *Perennial hairy Mountain Larkſpur with a Monkſhood leaf, commonly called the Bee Larkſpur.*
6. DELPHINIUM (*Grandiflorum*) nectaris diphyllis, labellis integris, floribus ſubſolitariis, foliis compoſitis lineari-multipartitis. Hort. Upſal. 150. *Larkſpur with a two-leaved nectarium, an entire lip, flowers growing ſingly, and compound leaves divided into many narrow parts.* Delphinium humilius anguſtifolium perenne, flore azureo. Amman. *Dwarf narrow-leaved perennial Larkſpur with an azure flower.*
7. DELPHINIUM (*Americanum*) nectariis diphyllis, labellis integris, floribus ſpicatis, foliis palmatis multifidis glabris. Plate 119. *Larkſpur with a two-leaved nectarium, an entire lip, flowers growing in ſpikes, and palmated, multifid, ſmooth leaves, commonly called American Larkſpur.*
8. DELPHINIUM (*Staphiſagria*) nectariis diphyllis, foliis palmatis, lobis integris. Hort. Cliff. 213. *Larkſpur with a two-leaved empalement, and palmated leaves having entire lobes.* Delphinium platani folio, ſtaphyſagria dictum. Tourn. Inſt. R. H. 428. *Larkſpur with a Plane-tree leaf, called Staveſacre.*

The ſeveral varieties of the Garden Larkſpur are not here enumerated, as they would ſwell the work beyond its intended bulk, if all theſe were diſtinguiſhed, therefore here are only the diſtinct ſpecies mentioned; and as the gardeners diſtinguiſh the Garden Larkſpurs into thoſe which are branched, and ſuch as have upright ſtalks; which difference is permanent, and never alters, whatever may be aſſerted to the contrary by ignorant pretenders; ſo I ſhall juſt mention the ſeveral varieties which there are of each ſort, commonly cultivated in the gardens of the curious. And firſt of the branched Larkſpur, there are of the following colours, with ſingle and double flowers.

Blue, purple, white, fleſh, Aſh, and Roſe colours; and ſome have flowers beautifully ſpotted, with two or three of theſe different colours.

The upright or unbranched Larkſpur, produces a greater variety of colours than the branched, and the flowers are larger and fuller than thoſe; but the principal colours run nearly the ſame with thoſe of the other, though many of the colours are deeper, and there are more different ſhades of theſe colours in the flowers of this ſort.

The firſt ſort grows naturally on arable lands, in France, Spain, and Italy, and is ſuppoſed to be the ſame as the Garden Larkſpur, which is a great miſtake; for I have cultivated it many years in the garden, and never found it alter: the leaves of this ſort are broader, and not ſo much divided as thoſe of the garden kind, and are placed thinner upon the ſtalks; the flowers are ſmaller, and grow in longer ſpikes; the ſtalks are not ſo much branched as that ſort which is called the branched, nor are they ſingle like the upright, ſo that I think it may be allowed to be a different ſpecies.

The ſecond ſort hath upright ſtalks, which ſcarce put out any branches; the ſpikes of flowers grow erect, and the flowers are placed very cloſe together, ſo that they make a fine appearance. Theſe plants flower in July and Auguſt, and are very great ornaments to the borders of the flower-garden.

The branching Larkſpur, which is the third ſort, comes later to flower than the upright; this riſes with a very branching ſtalk three feet high or more; the branches come out horizontally from the ſide of the ſtalks, but afterward turn that part on which the ſpike of flowers grow, which is at the extremity upward, ſo as to make an angle; the leaves are long and finely divided; the flowers are placed thinner in the ſpikes than thoſe of the upright ſort; they are large, and ſome of them very double and of various colours.

Theſe plants are annual, ſo are every year propagated by ſeeds, which ſhould be ſown where the plants are deſigned to remain, for they do not bear tranſplanting well, eſpecially if they are not removed very young; thoſe ſeeds which are ſown in autumn, produce the ſtrongeſt plants and moſt double flowers, and ripen their ſeeds better than thoſe which are ſown in the ſpring, as they come earlier to flower; but to continue a ſucceſſion of theſe flowers, there ſhould be ſome ſeeds ſown in the ſpring. When they are ſown on the borders of the flower-garden for ornament, they ſhould be in patches of about a foot diameter, in the middle of the borders, at proper diſtances; in each of theſe patches may be ſcattered ten or a dozen ſeeds, covering them over about a quarter of an inch with earth; and in the ſpring the plants may be thinned, leaving about five or ſix of the upright ſort in each patch to ſtand for flowering; but of the branching ſort, not more than three or four, becauſe theſe require room; after this the plants will require no farther care but to keep them clean from weeds, and when they begin to flower ſhould be ſupported by flower-ſticks to prevent their being broken by wind, eſpecially if they are not in a ſheltered ſituation. If the ſeeds were well choſen, there will be very few

ordinary

ordinary flowers among them; and if there are ſeeds of the different coloured flowers ſown in each patch, they will make a pleaſing variety: but the upright ſort ſhould never be mixed in the ſame patches with the branching, becauſe they do not flower at the ſame time.

But in order to preſerve the two ſorts fine without degenerating to ſingle or bad colours, there ſhould be a bed of each ſort ſown in autumn, in ſome ſeparate part of the garden, where the plants ſhould be properly thinned, and kept clean from weeds, till they begin to ſhew their flowers; when they ſhould be carefully looked over every other day, to pull out all thoſe plants, whoſe flowers are not very double nor of good colours; for if theſe are permitted to ſtand among the others till their farina has impregnated them, it will certainly cauſe them to degenerate; ſo that thoſe perſons who are contented with only marking their good flowers for ſeed, and ſuffer the others to ſtand for ſeed among them, will always find themſelves diſappointed in the goodneſs of their flowers the following ſeaſon: therefore thoſe who propoſe to have theſe flowers in perfection, ſhould never gather the ſeeds of ſuch as grew in the borders of the flower-garden; becauſe there it will be almoſt impoſſible to preſerve them ſo true, as when they are in beds at a diſtance from all other kinds.

When the ſeed-veſſels turn brown, they muſt be carefully watched, to gather them before they open and diſcharge the ſeeds; ſo that thoſe which are ſituated on the lower part of the ſtalk, will open long before thoſe on the upper part of the ſtalk are ripe; for which reaſon the pods ſhould from time to time be gathered as they ripen, and not ſuffered to ſtand till the ſtalks are pulled up, which is often practiſed. Thoſe pods which are ſituated on the lower part of the ſtalks, are much preferable to ſuch as grow near the top; for which reaſon thoſe who are very curious in the choice of their ſeeds, crop off the upper part of the ſpikes of flowers, and never ſuffer them to ſtand for ſeeds.

As theſe plants are very hardy, and require ſo little care in their culture, ſo they are worthy of a place in every good garden; for during their continuance in flower, there are few plants which make a better appearance; and for gathering to make flower-pots to adorn rooms, there is ſcarce any flower ſo proper; becauſe by their upright growth and long ſpikes, they riſe to a proper height above the pots; and when the ſeveral colours are ſkilfully intermixed they make a rich appearance, and continue long in beauty.

The fourth ſort grows naturally in Sicily and Spain, I received the ſeeds of it from Gibraltar; this hath a very branching ſtalk, which riſes about two feet high; the lower leaves are divided into many broad obtuſe ſegments, but thoſe which are upon the ſtalks are generally ſingle; the flowers grow ſcatteringly toward the upper part of the branches, they are ſmall, and of a deep blue colour; theſe are ſucceeded by very ſmall ſeed-veſſels, which are ſometimes ſingle, and at others double, and very rarely three together, as in the common ſorts. This is an annual plant, whoſe ſeeds ſhould be ſown in autumn, and the plants treated as the common ſort; it hath little beauty, and is only kept in ſome gardens for the ſake of variety.

The fifth ſort hath a perennial root, which ſends out ſeveral upright ſtalks in the ſpring, riſing to the height of four feet, garniſhed with leaves which are divided into many broad ſegments, in form of a ſpreading hand; theſe ſegments are cut at their extremities into two or three acute points; the leaves are hairy, and ſtand upon long foot-ſtalks; the flowers terminate the ſtalks, growing in long ſpikes; they are of a light blue, covered toward their hinder part with a meally down. This flowers in July and Auguſt, and in autumn the ſtalks decay to the root.

The ſixth ſort grows naturally in Siberia, from whence the ſeeds were ſent to the Imperial garden at Peterſburgh, where they ſucceeded; and the ſeeds were ſent me from thence by the late Dr. Amman, who was profeſſor of botany in that univerſity. This hath a perennial root, which puts out two or three branching ſtalks every ſpring; theſe riſe about a foot and a half high, and are garniſhed at each joint with leaves compoſed of many narrow ſegments, which terminate with ſeveral acute points; they are ſmooth, and of a light green colour; the flowers come out toward the upper part of the ſtalks ſingly, each ſtanding upon a long naked foot-ſtalk; theſe are large, and of a fine azure colour; they appear the latter part of July, and are ſucceeded by ſeeds which ripen in the autumn.

The ſeventh ſort grows naturally in America; this is a perennial plant, which riſes with ſtrong branching ſtalks ſix or ſeven feet high, garniſhed with hand-ſhaped leaves, which are divided into four or five broad lobes, ending with many acute points; theſe are ſmooth, and ſtand upon long foot-ſtalks; the flowers terminate the ſtalks, growing in long ſpikes; they are of a fine blue colour, with a bearded nectarium, having two lips; and of a dark colour, reſembling at a ſmall diſtance the body of a bee.

All the perennial Larkſpurs are propagated by ſeeds, which, if ſown in autumn, will more certainly ſucceed, than thoſe which are ſown in the ſpring; when the plants come up, they ſhould be kept clean from weeds, and where they are too cloſe together, part of them ſhould be drawn out, to allow room for the others to grow till the following autumn, when they muſt be planted where they are to remain; the following ſummer they will flower, and the roots continue many years growing in magnitude, ſo will produce a greater number of flower-ſtalks.

The eighth ſort is an annual plant, which grows naturally in the Levant, as alſo in Calabria; this riſes with a ſtrong hairy ſtalk about two feet high, garniſhed with hand-ſhaped hairy leaves, compoſed of five or ſeven oblong lobes, which have frequently one or two acute indentures on their ſides; the flowers form a looſe ſpike at the upper part of the ſtalk, each ſtanding on a long foot-ſtalk; the flowers are of a pale blue or purple colour, and have a two-leaved nectarium: this is propagated by ſeeds, which ſhould be ſown in autumn, for thoſe ſown in the ſpring never grow the ſame year. The ſeeds ſhould be ſown where the plants are to remain, and require no other treatment than the common Larkſpur. The common people uſe the powder of this ſeed to kill lice, from whence it has been titled Louſewort.

DENS CANIS. See ERYTHRONIUM.

DENS LEONIS. See LEONTODON.

DENTARIA. Lin. Gen. Plant. 726. Tourn. Inſt. R. H. 225. tab. 110. Toothwort; in French *Dentaire.*

The CHARACTERS are,

The empalement of the flower is compoſed of four oblong oval leaves, which fall off; the flower hath four obtuſe petals placed in form of a croſs; it hath ſix ſtamina, four of which are as long as the empalement, the other two are ſhorter; theſe are terminated by oblong heart-ſhaped ſummits, which ſtand erect. In the center is ſituated an oblong germen, ſupporting a ſhort thick ſtyle, crowned by an obtuſe ſtigma; the germen afterward becomes a long taper pod with two cells, divided by an intermediate partition, opening with two valves, including many roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliquoſa, the flowers having four long and two ſhort ſtamina, and the ſeeds being incloſed in long pods.

The SPECIES are,

1. DENTARIA (*Pentaphyllos*) foliis ſummis digitatis. Lin. Sp. 912. *Five-leaved Toothwort, whoſe upper leaves are hand-ſhaped.* Dentaria pentaphyllos, foliis mollioribus. C. B. P. 322. *Five-leaved Toothwort with ſoft leaves.*
2. DENTARIA (*Bulbifera*) foliis inferioribus pinnatis, ſummis ſimplicibus. Hort. Cliff. 335. *Toothwort with lower leaves winged, and the upper ones ſingle.* Denta-

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ria heptaphyllos baccifera. C. B. P. 322. *Seven-leaved bulb-bearing Toothwort.*

3. DENTARIA (*Enneaphyllos*) foliis ternis ternatis. Lin. Sp. Plant. 653. *Toothwort with three-leaved trifoliate leaves.* Dentaria triphyllos. C. B. P. 322. *Three-leaved Toothwort.*

The firſt ſort riſes with a ſtrong ſtalk a foot and a half high, garniſhed with a leaf at each joint, compoſed of five lobes, which are four inches long, and near two broad in the wideſt part, ending in acute points, deeply ſawed on their edges; theſe are ſmooth, and ſtand on long foot-ſtalks; the flowers grow in looſe ſpikes at the top of the ſtalks; they are ſmall, of a bluſh colour, and ſucceeded by long taper pods filled with ſmall roundiſh ſeeds. It grows in the ſhady woods in the ſouth of France and Italy.

The ſecond ſort riſes with ſlender ſtalks about a foot high; the leaves at the bottom have ſeven lobes, thoſe a little above five, others but three, and at the upper part of the ſtalk they are ſingle: the flowers grow in cluſters at the top of the ſtalk; theſe have four obtuſe purple petals, and are ſucceeded by taper pods filled with roundiſh ſeeds.

The third ſort riſes with an upright ſtalk a foot high; the leaves are compoſed of nine lobes, three growing together, ſo that one leaf has three times three; the flowers grow in ſmall bunches on the top of the ſtalks, and are ſucceeded by ſmall taper pods filled with roundiſh ſeeds.

Theſe plants grow on the mountains in Italy, and in the woods of Auſtria. The ſecond ſort is found wild in ſome parts of England, but particularly near Harefield, in moiſt ſhady woods, and is ſeldom preſerved in gardens: this produces bulbs on the ſide of the ſtalks, where the leaves are ſet on, which, if planted, will grow and produce plants. Theſe plants are propagated by ſeeds, or parting their roots; the ſeeds ſhould be ſown in autumn, ſoon after they are ripe, in a light ſandy ſoil and a ſhady ſituation: in the ſpring the plants may be taken up where they grow too cloſe, and tranſplanted out in the like ſoil and ſituation; where, after they have taken root, they will require no farther care, but to keep them clear from weeds: the ſecond year they will produce flowers, and ſometimes perfect their ſeeds.

The beſt time to tranſplant the roots is in October, when they ſhould be planted in a moiſt ſoil and a ſhady ſituation; for they will not live in a dry ſoil, or when they are expoſed to the ſun.

DEW is by ſome defined to be a meteor bred of a thin cold vapour, or compoſed of the ſteams and vapours of the earth; which, being exhaled by the heat of the ſun, and kept ſuſpended during his preſence, do, upon his abſence, convene into drops, and then fall down unto the earth again.

Others define it, a thin, light, inſenſible miſt or rain, falling while the ſun is below the horizon.

The origin and matter of dews are, without doubt, from vapour and exhalations of the earth and water, raiſed by the warmth of the ſun and earth, &c.

There being many vapours in the air, though not always viſible, hence it comes to paſs, that even in clear weather great dews fall, eſpecially in countries where it ſeldom rains; for when it happens that the ſcattered vapours are collected and condenſed together, and forced downwards, they muſt needs fall, and bedew the plants and graſs.

The thin veſicles, of which vapours conſiſt, being once detached from their bodies, keep riſing in the air till they arrive at ſuch a ſtage as is of the ſame ſpecific gravity with themſelves, when their riſe is ſtopped: now, as it is the warmth or fire that dilates the parts of water, and forms thoſe veſicles that are ſpecifically lighter than the air, and are capable of aſcending therein; ſo when that heat declines, or is loſt, as by the approach or contiguity of any colder body, the veſicles condenſe, and become heavier and deſcend.

Therefore the ſun warming the atmoſphere in the day-time, by the continual influx of his rays, the vapours being once raiſed, continue their progreſs, not meeting with any thing to increaſe their gravity, till ſuch time as they are got far beyond the reach of the reflected warmth of the earth in the middle region of the atmoſphere, and there condenſe and form clouds.

Though ſome ſay, it is diſputable whether dews ever congregate ſo as to form clouds, as they are only elevated by the ſun; ſo that when that power is gone, as it is after the ſetting of the ſun, they immediately deſcend; and this is more obſervable in very warm weather, and very hot climates.

The time for the falling of the dew is either before ſun-riſing, or after ſun-ſet; that it may regularly fall at ſuch times, it is neceſſary for the air to be calm, for windy or ſtormy weather hinders it; but when it is calm weather, and gentle breezes are felt from the weſt about the ſetting, and from the eaſt about the riſing of the ſun, it is probable, that by moderately cooling the air, they collect the vapours and precipitate them; and becauſe the morning breezes are more general than the evening ones, for this reaſon the evening dews fall only here and there, but thoſe in the morning ſeldom fail to be univerſal: or, as it may be otherwiſe expreſſed, when the ſun is got below the horizon, the atmoſphere cools the vapours, which have in the preceding day been raiſed by the warmth of the earth; and the rays of the ſun being lodged there, as ſoon as they are got out of the air, they begin to condenſe apace, and ſpend their ſtock of heat and fire on the cold moiſt air that they paſs through.

Hence it is, that dews are more copious in the ſpring than other ſeaſons, there being a greater ſtock of vapour in readineſs, by reaſon there has been but a ſmall expence thereof during the winter's cold and froſt than at other times.

It is found by experience, that the dews are more copious in hotter countries than in cold, as Pliny obſerves of the ſummer nights in Africa, which he calls Roſcidæ æſtate noctes; the reaſon of which ſeems to be this, that in the day-time the heat of the ſun raiſes abundance of vapours out of the water; which vapours are ſo extremely rarefied by the ſame heat, that they are diſperſed far and wide; but the cool of the night brings them together, and condenſes them to that degree, that they fall to the ground, but not in ſuch large drops as rain does; but in colder countries, where there are frequent rains, and the vapours are leſs rarefied, moſt of them come down in rain, and but a ſmall part turns to dew: beſides, in Africa there is a great difference between the heat of the day and night, particularly in ſummer; for their nights are long, and very cold; whereas in northern countries they are little colder than the day, and much ſhorter than in places nearer the line.

Pliny likewiſe relates of Egypt, that it abounds in dews throughout all the heat of ſummer; for the air being there too hot to conſtipate the vapours in the day-time, they never gather into clouds, and for that reaſon they have no rain. But it is known, in climates where the days are exceſſive hot, the nights are remarkably cold, ſo that the vapours that are raiſed after ſun-ſet are readily condenſed into dews: or, perhaps notable coldneſs may be rather the effect than the cauſe of the quantity of dews; for much vapour being raiſed by the great heat of the earth, and the ſtock of fire being ſpent on it in the day-time, the influx of ſuch a great quantity of moiſture muſt greatly chill the air.

The difference between dew and rain ſeems to be only this, that dew falls at ſome particular times as aforeſaid, and in very ſmall drops, ſo as to be ſeen when down, but ſcarce perceivable while it is falling; whereas rain falls at any time, and in groſſer drops.

The reverend Dr. Hales, in his Treatiſe of Vegetable Statics, tells us, That in order to find out the quantity of dew that fell in the night on the 15th of Auguſt, 7 p. m. he took two glazed earthen pans, which were three inches deep, and twelve inches diameter

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in ſurface: that he filled them with pretty moiſt earth, taken off the ſurface of the ground, and they increaſed in weight by the night's dew 180 grains; and decreaſed in weight by the evaporation of the day 1 ounce + 282 grains.

He ſays likewiſe, he ſet theſe in other broader pans to prevent any moiſture from the earth ſticking to the bottom of them. He adds, that the moiſter the earth is, the more dew falls on it in a night, and more than a double quantity of dew falls on a ſurface of water than there does on an equal ſurface of moiſt earth. The evaporation of a ſurface of water in nine hours winter's dry day, is $\frac{1}{211}$ of an inch: the evaporation of a ſurface of ice ſet in the ſhade during a nine hours day, was $\frac{1}{311}$.

So here are 540 grains more evaporated from the earth every 24 hours in ſummer than fall in dew in the night; that is, in 21 days near 26 ounces from a circular area of a foot diameter; and circles being as the ſquares of their diameters, 10 pounds + 2 ounces will in 21 days be evaporated from the hemiſphere of 30 inches diameter, which the Sunflower's root occupies; which, with the 29 pounds drawn off by the plant in the ſame time, makes 39 pounds, that is, 9 pounds and $\frac{3}{4}$ out of every cubic foot of earth, the plant's roots occupying more than 4 cubic feet: but this is a much greater degree of drineſs than the ſurface of the earth ever ſuffers for 15 inches depth, even in the drieſt ſeaſons in this country.

In a long dry ſeaſon therefore, eſpecially within the tropics, we muſt have recourſe, for ſufficient moiſture to keep plants and trees alive, to the moiſt ſtrata of earth, which lie next below that in which the roots are.

Now moiſt bodies always communicate of their moiſture to more dry adjoining bodies; but this ſlow motion of the aſcent of moiſture is much accelerated by the ſun's heat to conſiderable depths in the earth, as is probable, he ſays, from the twentieth experiment in the ſaid book.

Now 180 grains of dew falling in one night on a circle of a foot diameter = 113 ſquare inches; theſe 180 grains being equally ſpread on this ſurface, its depth will be $\frac{1}{159}$ part of an inch = $\frac{180}{113 \times 254}$. He adds, that he found the dew in a winter night to be the $\frac{1}{90}$ part of an inch; ſo that if we allow 151 nights for the extent of the ſummer dew, it will in that time ariſe to one inch depth: and reckoning the remaining 214 nights for the extent of the winter's dew, it will produce 2,39 inches depth, which makes the dew of the whole year amount to 3,39 inches depth.

And the quantity which evaporated in a fair ſummer's day from the ſame ſurface, being as 1 ounce 282 grains, gives $\frac{1}{40}$ part of an inch depth for evaporation, which is four times as much as fell at night.

He ſays likewiſe, that he found by the ſame means, the evaporation of a winter's day to be nearly the ſame as in a ſummer's day; for the earth being in winter more ſaturate with moiſture, that exceſs of moiſture anſwers to the exceſſive heat in ſummer.

Nic. Cruquius, N° 381. of the Philoſophical Tranſactions, found, that 28 inches depth evaporated in a whole year from water, i. e. $\frac{1}{12}$ of an inch each day at a mean rate: but the earth in a ſummer's day evaporates $\frac{1}{40}$ of an inch, ſo the evaporation of a ſurface of water is to the evaporation of a ſurface of earth in ſummer as 10 : 3.

The quantity of rain and dew that falls in a year is at a medium 22 inches. The quantity of the earth's evaporation in a year is at leaſt 9 + $\frac{1}{2}$ inches; ſince that is the rate at which it evaporates in a ſummer's day: from which 9 + $\frac{1}{2}$ inches are to be deducted 3,39 inches for circulating daily dew, there remains 6,2 inches; which 6,2 inches deducted from the quantity of rain that falls in a year, there remains at leaſt 16 inches depth to repleniſh the earth with moiſture for vegetation, and to ſupply the ſprings and rivers.

Dr. Hales proceeds to inſtance, in the caſe of a Hop-ground which he gives in the ninth experiment of his book of Vegetable Statics, that the evaporation there found, from the Hops, conſidered only for three months, at $\frac{1}{101}$ part of an inch each day, which will be $\frac{9}{10}$ of an inch: but before it be allowed 6,2 inches to form the ſurface of the ground, which added to the $\frac{9}{10}$ give 7,1 inches, which is the utmoſt that can be evaporated from a ſurface of Hop-ground in a year; ſo that of 22 inches depth of rain, there remain 15 inches to ſupply ſprings, which are more or leſs exhauſted, according to the drineſs or wetneſs of the year.

Hence we find, that 22 inches depth of rain in a year is ſufficient for all the purpoſes of nature in ſuch flat countries as that about Teddington near Hampton Court. But in the hill countries, as in Lancaſhire, there falls 42 inches depth of rain water, from which, deducting 7 inches for evaporation, there remains 35 inches depth of water for the ſprings, beſides great ſupplies from much more plentiful dews than fall in plain countries; which vaſt ſtores ſeem ſo abundantly ſufficient to anſwer the great quantity of water, which is conveyed away by the ſprings and rivers from thoſe hills, that we need not have recourſe for ſupplies to the great abyſs, whoſe ſurface at high water is ſurmounted ſome hundreds of feet by thoſe vaſt hills from whence the longeſt and greateſt rivers take their riſe.

DIANTHERA. Lin. Gen. Plant. 37. Flor. Virg. 6.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is tubulous, and cut at the top into five equal parts; the flower is of the grinning kind, having one petal with a ſhort tube; the upper lip is reflexed and bifid, the lower is divided into three parts, the middle being the broadeſt; it hath two ſhort ſlender ſtamina adhering to the back of the petal, one of theſe hath a twin ſummit, the other is a little taller. It hath an oblong germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by an obtuſe ſtigma. The empalement afterward becomes a capſule with two cells, opening with two valves, which are alternately compreſſed at the top and bottom, and open with an elaſticity, caſting a ſingle flat ſeed out of each cell.

This genus of plants is ranged in the firſt ſection of Linnæus's ſecond claſs, intitled Diandria Monogynia, the flower having two ſtamina and one ſtyle. This is one of the genera which, by Linnæus's method, is ſeparated to a great diſtance from their congeners; for by all their other characters they ſhould be joined to his fourteenth claſs, but having only two ſtamina, they are put under his ſecond.

We know but one SPECIES of this genus at preſent, viz.

DIANTHERA (*Americana*) ſpicis ſolitariis alternis. Lin. Sp. 24. *Dianthera with ſolitary alternate ſpikes.*

This plant grows naturally in Virginia, and other parts of North America, from whence the ſeeds have been ſent to England, where they have ſucceeded. This is a low herbaceous plant with a perennial root, which ſends out ſeveral weak ſtalks about four inches long, garniſhed with roundiſh leaves of an aromatic odour, ſtanding cloſe to the ſtalks; they are hairy, and of a dark green colour; from the ſide of the ſtalks the flowers are produced in ſmall ſpikes, placed alternately; theſe are in ſhape and colour very like thoſe of the Clinopodium, but have only two ſtamina in each. It flowers the latter end of July, but rarely produces ſeeds in England.

This plant is very difficult to preſerve in this country, for although it is hardy enough to live in the open air in England, yet it is very ſubject to rot in winter; and if it is placed under ſhelter, it is apt to draw up weak, and ſoon after decay, ſo that at preſent the plants are rare in this country.

DIANTHUS. Lin. Gen. Plant. 500. Caryophyllus. Tourn. Inſt. R. H. 329. Clove Gilly Flower, Carnation Pink; in French, *Oeillet.*

The CHARACTERS are,

The flower hath a long cylindrical empalement which is permanent; it hath five petals, whose tails are as long as the empalement, but their upper part is broad, plain, and crenated on their borders; these are inserted in the bottom of the tube, and spread open above. It hath ten stamina which are as long as the empalement, terminated by oblong compressed summits. In the center is situated an oval germen, supporting two styles which are longer than the stamina, crowned by recurved stigmas. The germen afterward becomes a cylindrical capsule with one cell, opening in four parts at the top, and filled with compressed angular seeds.

This genus of plants is ranged in the second section of Linnæus's tenth class, intitled Decandria Digynia, the flowers having ten stamina and two styles.

The SPECIES are,

1. DIANTHUS (*Deltoides*) floribus solitariis, squamis calycinis lanceolatis binis, corollis crenatis. Hort. Cliff. 164. *Dianthus with a single flower having a double scaly empalement, and crenated petals.* Caryophyllus sylvestris vulgaris latifolius. C. B. P. 209. *Maiden Pink.*
2. DIANTHUS (*Virgineus*) caule subunifloro, corollis crenatis, squamis calycinis brevissimis, foliis subulatis. Lin. Sp. Plant. 412. *Dianthus with one flower on a stalk, crenated petals, very short scales to the empalement, and awl-shaped leaves.* Caryophyllus minor repens. Nostras. Raii. Syn. 335. *English small creeping Pink, commonly called the matted Pink by seedsmen.*
3. DIANTHUS (*Glaucus*) floribus subsolitariis, squamis calycinis lanceolatus quaternis, corollis crenatis. Hort. Cliff. 164. *Dianthus with one flower on a stalk, having four spear-shaped scales to the empalement, and crenated petals.* Tunica ramosior flore candido cum corollâ purpureâ. Hort. Elth. 400. *Branching Pink with a white flower, having a purple circle, commonly called Mountain Pink.*
4. DIANTHUS (*Plumarius*) floribus solitariis, squamis calycinis subovatis brevissimis, corollis multifidis fauce pubescentibus. Lin. Sp. Plant. 411. *Dianthus with a single flower, having short oval scales to the empalement, and petals cut into many points, with a hairy bottom.* Caryophyllus simplex flore minore pallido rubente. C. B. P. 208. *Single wild Pink, with a small, pale, reddish flower.*
5. DIANTHUS (*Caryophyllus*) floribus solitariis squamis calycinis subovatis brevissimis, corollis crenatis. Hort. Cliff. 164. *Dianthus with a single flower, having short oval scales to the empalement, and crenated petals.* Caryophyllus hortensis simplex, flore majore. C. B. P. 208. *Single Garden Carnation with a large flower.*
6. DIANTHUS (*Armeria*) floribus aggregatis fasciculatis, squamis calycinis lanceolatis villosis tubum æquantibus. Hort. Cliff. 165. *Dianthus with many flowers gathered into bunches, having hairy spear-shaped scales to the empalement, as long as the tube of the flower.* Caryophyllus barbatus sylvestris. C. B. P. 208. *Bearded wild Pink, called Deptford Pink.*
7. DIANTHUS (*Barbatus*) floribus aggregatis fasciculatis, squamis calycinis linearibus, foliis lanceolatis. *Dianthus with many flowers gathered in bunches, having very narrow scales to the empalement, and spear-shaped leaves.* Caryophyllus barbatus hortensis latifolius. C. B. P. 208. *Broad-leaved Garden Sweet William.*
8. DIANTHUS (*Prolifer*) floribus aggregatis capitatis, squamis calycinis ovatis obtusis muticis tubum superantibus. Lin. Sp. Plant. 587. *Dianthus with flowers collected into heads, and obtuse, oval, chaffy scales to the empalements, which are longer than the tube.* Caryophyllus sylvestris prolifer. C. B. P. 209. *Wild childing Sweet William.*
9. DIANTHUS (*Ferrugineis*) floribus aggregatis capitatis, squamis calycinis lanceolatis aristatis, corollis crenatis. *Dianthus with flowers collected in heads, having spear-shaped scales to the empalement which are bearded, and crenated petals.* Caryophyllus montanus umbellatus, floribus variis luteis ferrugineis Italicus. Barrel. Obs. 648. *Italian umbellated Mountain Pink, with flowers varying from yellow to an iron colour.*
10. DIANTHUS (*Chinensis*) floribus solitariis, squamis calycinis subulatis patulis, tubum æquantibus, corollis crenatis. Hort. Cliff. 164. *Dianthus with a single flower on each stalk, awl-shaped spreading scales to the empalement equalling the tube, and crenated petals.* Caryophyllus sinensis supinus, leucoii folio, flore unico. Tourn. Act. Par. 1705. *The China Pink.*
11. DIANTHUS (*Arenarius*) caulibus unifloris squamis calycinis ovatis obtusis, corollis multifidis, foliis linearibus. Flor. Suec. 318. *Dianthus having a single flower upon a stalk, oval scales to the empalement, the petals of which are cut into many points, and narrow leaves.* Caryophyllus sylvestris humilis, flore unico. C. B. P. 209. *Dwarf wild Pink with one flower.*
12. DIANTHUS (*Alpinus*) caule unifloro, corollis crenatis, squamis calycinis exterioribus tubum æquantibus, foliis linearibus obtusis. Lin. Sp. Plant. 412. *Dianthus with one flower having crenated petals, the outer scales of the empalement equalling the tube, and narrow obtuse leaves.* Caryophyllus pumilus latifolius. C. B. P. 209. *Dwarf broad-leaved Pink.*
13. DIANTHUS (*Superbus*) floribus paniculatis, squamis calycinis brevibus acuminatis, corollis multifido-capillaribus, caule erecto. Amœn. Acad. 4. p. 272. *Dianthus with paniculated flowers, having short-pointed scales to their empalement, multifid petals, and an upright stalk.*
14. DIANTHUS (*Diminutus*) floribus solitariis, squamis calycinis octonis florem superantibus. Lin. Sp. 587. *Dianthus with a single flower on each stalk, having eight scales which rise above the petals of the flower.* Caryophyllus sylvestris minimus. Tabern. Hist. 290.

The first sort hath creeping stalks, from which come out several tufted heads, closely garnished with narrow leaves, whose base lie over each other embracing the stalks; between these arise the flower-stalks, which grow about six inches high, garnished at every joint by two narrow grassy leaves placed opposite. The stalks are terminated by a single flower. It flowers in June and July, and the seeds ripen in autumn. This is rarely admitted into gardens, the flower having no beauty.

The second sort is a low trailing plant, whose stalks lie on the ground; these grow very close together, and are garnished with short, narrow, grassy leaves of a deep green colour; the stalks are terminated by small red flowers, each standing upon a separate foot-stalk. It flowers in July, and the seeds ripen in September. This sort grows naturally in several parts of England, so is not often cultivated in gardens at present; but formerly the seeds were sown to make edgings for the borders of the flower-garden by the title of matted Pink, by which the seeds were sold in the shops.

The third sort grows naturally upon Chidder rocks in Somersetshire, and some other parts of England. This was formerly cultivated in the gardens by the title of Mountain Pink. It hath a resemblance of the second sort, but the leaves are shorter, and of a grayish colour; the stalks grow taller, and branch more; the flowers are larger, of a white colour, with a purple circle in the bottom, like that sort of Pink called Pheasants Eye. As the flowers of this sort have no scent, the plants are seldom kept in gardens.

The fourth sort grows naturally in several parts of England, frequently upon old walls; it is a small single Pink, of a pale red colour, so is not cultivated in gardens.

The fifth sort is a small single Carnation, which has been long cast out of all the gardens; from one of this sort it is supposed, many of the fine flowers now cultivated in the gardens have been raised.

The sixth sort grows naturally in several parts of England, and particularly in a meadow near Deptford in Kent, from whence it had the title of Deptford Pink. This is of the kind called Sweet William; the flowers of these grow in clusters at the end of the branches; they are red, and have long bearded empalements. I have cultivated this sort above forty years, and have never observed it to vary.

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The ſeventh ſort is the common Sweet William, which has been long cultivated in the gardens for ornament, of which there are now great varieties which differ in the form and colour of their flowers, as alſo in the ſize and ſhape of their leaves; thoſe which have narrow leaves were formerly titled Sweet Johns by the gardeners, and thoſe with broad leaves were called Sweet Williams; there are ſome of both theſe ſorts with double flowers, which are very ornamental plants in gardens.

The eighth ſort grows naturally in the ſouth of France, in Spain, Italy, and in England. This is an annual plant, which riſes with an upright ſtalk about a foot high, garniſhed with narrow graſſy leaves, and is terminated by a ſmall head or cluſter of pale red flowers, which are included in one common ſcaly empalement. Theſe have little beauty, ſo the plants are ſeldom kept in gardens.

The ninth ſort is a biennial plant, which riſes with an upright ſtalk a foot and a half high, having two long narrow leaves placed oppoſite at each joint, which embrace the ſtalk with their baſe; they are of a deep green colour, ſtiff, and end in acute points. The flowers grow in cloſe cluſters at the top of the ſtalks, having ſtiff bearded empalements; they are yellow and iron coloured intermixed on the ſame ſtalk, and frequently they are of both colours in the ſame head. This plant flowers in July, and the ſeeds ripen in autumn.

The tenth ſort came originally from China, ſo it is titled the China Pink; the flowers of this have no ſcent, but there are a great variety of lively colours among them; and of late years there has been great improvements made in the double flowers of this ſort, ſome of which are as full of petals as the double Pink, and their colours are very rich. The plants ſeldom grow more than eight or nine inches high, branching out on every ſide; the branches grow erect, and are terminated each by a ſingle flower. Theſe flower in July, and continue in ſucceſſion till the froſt ſtops them; they are commonly raiſed every year from ſeeds, but the roots will continue two years in dry ground.

The eleventh ſort is found growing naturally upon old walls and buildings in many parts of England; this is a ſingle ſmall Pink, of a ſweet odour, but of a pale colour and ſmall, ſo makes no appearance; and ſince the great improvement which has been made in theſe flowers by culture, this has been entirely neglected.

The twelfth ſort grows naturally on the Alps. This hath round, ſhort, blunt leaves; the ſtalks ſeldom riſe more than four inches high, each being terminated by a ſingle flower of a pale red colour. It is ſometimes preſerved in botanic gardens for the ſake of variety, but is rarely admitted into other gardens.

The thirteenth ſort grows naturally in Germany and Denmark; the leaves of this ſort are like thoſe of the narrow-leaved Sweet William; the ſtalk riſes more than a foot high, and is terminated by a ſingle flower, having five large petals of a pale red colour, which are cut into many long ſegments. The roots of this ſort will live three or four years, but the ſecond year from ſeeds they are in greateſt beauty; therefore as the ſeeds ripen well in England, young plants ſhould be annually raiſed.

The fourteenth ſort is a very diminutive plant, having ſhort narrow leaves growing in cloſe heads; the ſtalk ſeldom riſes ſix inches high, which is terminated by a ſingle flower, of a pale red colour, ſo has little beauty, therefore is only kept in botanic gardens for variety.

The ſorts here enumerated, are ſuch as the botaniſts allow to be diſtinct ſpecies; and all the varieties of fine flowers, which are now cultivated in the gardens of the curious, are only accidental variations which have been produced by culture; and the number of theſe are greatly increaſed annually, in many different parts of Europe; ſo that as new varieties are obtained, the old flowers are rejected.

The plants of this genus may be properly enough divided into three ſections. The firſt to include all the variety of Pinks, the ſecond all the Carnations, and the third thoſe of the Sweet William; for although theſe agree ſo nearly in their principal characters, as to be included under the ſame genus by the botaniſts, yet they never vary from one to the other, though they frequently change and vary in the colour of their flowers.

I ſhall now proceed to treat of theſe under their different ſections, and firſt I ſhall begin with the Pink, of which there are a great variety now cultivated in the gardens; the principal of which are, the damaſk Pink, the white Shock, the Pheaſant Eye, with double and ſingle flowers, varying greatly in their ſize and colour; the common red Pink, Cob's Pink, Dobſon's Pink, white Cob Pink, and Bat's Pink. The old Man's Head, and painted Lady Pink, rather belong to the Carnation.

The damaſk Pink is the firſt of the double ſorts in flower. This hath but a ſhort ſtalk; the flower is not very large, and not ſo double as many others; the colour is of a pale purple, inclining to red, but is very ſweet.

The next which flowers is the white Shock, which was ſo called from the whiteneſs of its flowers, and the borders of the petals being much jagged and fringed; the ſcent of this is not ſo agreeable as of ſome others.

Then comes all the different kinds of Pheaſants Eye, of which there are frequently new varieties raiſed, which are either titled from the perſons who raiſed them, or the place where they were raiſed; ſome of theſe have very large double flowers, but thoſe which burſt their pods are not ſo generally eſteemed.

The Cob Pink comes after theſe to flower; the ſtalks of this are much taller than thoſe of any of the former; the flowers are very double, and of a bright red colour; theſe have the moſt agreeable odour of all the ſorts, ſo merits a place in every good garden. The time of the Pinks flowering is from the latter end of May to the middle of July, and frequently that ſort of Pheaſant Eye, which is called Bat's Pink, will flower again in autumn.

The old Man's Head Pink, and the painted Lady, do not flower till July, coming at the ſame ſeaſon with the Carnation, to which they are more nearly allied than the Pink. The firſt when it is in its proper colours, is purple and white ſtriped and ſpotted, but this frequently is of one plain colour which is purple; this ſort will continue flowering till the froſt in autumn puts a ſtop to it, and the flowers having an agreeable ſcent, renders them valuable. The painted Lady is chiefly admired for the livelineſs of its colour, for it is not ſo ſweet, or of ſo long continuance as the other.

The common Pinks are propagated either by ſeeds, which is the way to obtain new varieties, or by making layers of them, as is practiſed for Carnations; or by planting ſlips, which, if carefully managed, will take root very well.

If they are propagated by ſeeds, there ſhould be care taken in the choice of them, and only the ſeeds of the beſt ſorts ſaved, where the perſons are curious to have the fineſt flowers. Theſe ſeeds may be ſown in the ſpring, and the plants afterward treated in the ſame manner as is hereafter directed for the Carnation; with this difference only, that as the Pinks are leſs tender, they may be more hardily treated. Thoſe which are propagated by layers, muſt be alſo managed as the Carnation, for which there are full inſtructions hereafter given. The old Man's Head and painted Lady Pinks, are commonly propagated this way, but moſt of the other ſorts are propagated from ſlips.

The beſt time to plant the ſlips of Pinks is about end of July, when, if there ſhould happen rain, it will be of great ſervice to them; but if the weather ſhould prove dry, they will require to be watered every other day, until they have taken root; theſe

ſhould

ſhould be planted in a ſhady border, and the ground ſhould be dug well, and all the clods broken, and if no rain falls, it ſhould be well ſoaked with water a few hours before the ſlips are planted; then the ſlips ſhould be taken from the plants, and all their lower leaves ſtripped off, and planted as ſoon as poſſible after, for if they are ſuffered to lie long after they are taken from the plants, they will wither and ſpoil; theſe need not be planted at a greater diſtance than three inches ſquare, and the ground muſt be cloſed very hard about them; then they muſt be well watered, and this muſt be repeated as often as is found neceſſary, till the cuttings have taken root; after which they will require no other care but to keep them clean from weeds till autumn, when they ſhould be tranſplanted to the borders of the flower-garden where they are to remain. There are ſome who plant the ſlips of Pinks later in the ſeaſon than is here directed; but thoſe plants are never ſo ſtrong nor flower ſo well, as thoſe which are early planted.

We ſhall next proceed to the culture of the Carnation; theſe the floriſts diſtinguiſh into four claſſes.

The firſt they call Flakes; theſe are of two colours only, and their ſtripes are large, going quite through the leaves.

The ſecond are called Bizarrs; theſe have flowers ſtriped or variegated with three or four different colours, in irregular ſpots and ſtripes.

The third are called Piquettes; theſe flowers have always a white ground, and are ſpotted (or pounced, as they call it) with ſcarlet, red, purple, or other colours.

The fourth are called painted Ladies; theſe have their petals of a red or purple colour on the upper ſide, and are white underneath.

Of each of theſe claſſes there are numerous varieties, but chiefly of the Piquettes, which ſome years ago were chiefly in eſteem with the floriſts, but of late years the Flakes have been in greater requeſt than any of the other kinds. To enumerate the varieties of the chief flowers in any one of theſe claſſes, would be needleſs, ſince every country produces new flowers almoſt every year; ſo that thoſe flowers, which, at their firſt raiſing, were greatly valued, are in two or three years become ſo common, as to be of little worth, eſpecially if they are defective in any one property. Therefore (where flowers are ſo liable to mutability, either from the fancy of the owner, or that better kinds are yearly produced from ſeeds, which, with good floriſts, always take place of older or worſe flowers, which are turned out of the garden to make room for them) it would be but ſuperfluous in this place to give a liſt of their names, which are generally borrowed either from the names and titles of noblemen, or from the perſon's name, or place of abode, who raiſed it.

Theſe flowers are propagated either from ſeeds (by which new flowers are obtained), or from layers, for the increaſe of thoſe ſorts which are worthy maintaining; but I ſhall firſt lay down the method of propagating them from ſeeds, which is thus:

Having obtained ſome good ſeeds, either of your own ſaving, or from a friend that you can confide in, about the middle of April, prepare ſome pots or boxes (according to the quantity of ſeed you have to ſow); theſe ſhould be filled with freſh light earth mixed with rotten neats dung, which ſhould be well incorporated together; then ſow your ſeeds thereon (but not too thick) covering it about a quarter of an inch with the ſame light earth, placing the pots or caſes ſo as to receive the morning ſun only till eleven of the clock, obſerving alſo to refreſh the earth with water as often as it may require. In about a month's time your plants will come up, and if kept clear from weeds, and duly watered, will be fit to tranſplant about the latter end of July; at which time you ſhould prepare ſome beds (of the ſame ſort of earth as was directed to ſow them in) in an open airy ſituation, in which you ſhould plant them at about three inches ſquare, obſerving to water and ſhade them till they have taken new root, then you muſt obſerve to keep them clear from weeds; in theſe beds they may remain until the end of Auguſt, by which time they will have grown ſo large as almoſt to meet each other; then prepare ſome more beds of the like good earth (in quantity proportionable to the flowers you have raiſed) in which you ſhould plant them at ſix inches diſtance each way, and not above four rows in each bed, for the more conveniently laying ſuch of them as may prove worthy preſerving, for in theſe beds they ſhould remain to flower.

The alleys between theſe beds ſhould be two feet wide, that you may paſs between the beds to weed and clean them. If the ſeaſon ſhould prove very dry at this time, they ſhould not be tranſplanted till there is ſome rain; ſo that it may happen to be the middle, or latter end of September ſome years, before there may be wet enough to moiſten the ground for this purpoſe; but if there is time enough for the plants to get good root before the froſt comes on, it will be ſufficient. If the winter ſhould prove ſevere, the beds ſhould be arched over with hoops, that they may be covered with mats, otherwiſe many of the plants may be deſtroyed, for the good flowers are not ſo hardy as the ordinary ones of this genus. There will be no other culture wanting to theſe, but to keep them clean from weeds, and when they ſhoot up their ſtalks to flower, they muſt be ſupported by ſticks to prevent their breaking. When your flowers begin to blow, you muſt look over them to ſee which of them proffer to make good flowers, which as ſoon as you diſcover, you ſhould lay down all the layers upon them; thoſe which are well marked, and blow whole without breaking their pods, ſhould be reſerved to plant in borders, to furniſh you with ſeed; and thoſe which burſt their pods, and ſeem to have good properties, ſhould be planted in pots, to try what their flowers will be, when managed according to art; and it is not till the ſecond year that you can pronounce what the value of a flower will be, which is in proportion to the goodneſs of its properties; but, that you may be well acquainted with what the floriſts call good properties, I ſhall here ſet them down.

1. The ſtem of the flower ſhould be ſtrong, and able to ſupport the weight of the flower without hanging down.
2. The petals (or leaves) of the flower ſhould be long, broad, and ſtiff, and pretty eaſy to expand, or (as the floriſts term them) ſhould be free flowers.
3. The middle pod of the flower ſhould not advance too high above the other petals of the flower.
4. The colours ſhould be bright, and equally marked all over the flower.
5. The flower ſhould be very full of leaves, ſo as to render it, when blown, very thick and high in the middle, and the outſide perfectly round.

Having made choice of ſuch of your flowers as promiſe well for the large ſort, theſe you ſhould mark ſeparately for pots, and the round whole blowing flowers for borders; you ſhould pull up all ſingle flowers, or ſuch as are ill-coloured, and not worth preſerving, that your good flowers may have the more air and room to grow ſtrong; theſe having been laid at a proper ſeaſon, as ſoon as they have taken root (which will be ſome time in Auguſt) they ſhould be taken off, and planted out, thoſe that blow large, in pots, and the other in borders (as hath been already directed).

Of late years the whole-blowing flowers have been much more eſteemed than thoſe large flowers which burſt their pods, but eſpecially thoſe round flowers which have broad ſtripes of beautiful colours, and round Roſe leaves, of which kinds there have been a great variety introduced from France within theſe few years; but as theſe French flowers are extremely apt to degenerate to plain colours, and being much tenderer than thoſe which are brought up in England, there are not ſuch great prices given for the plants now, as have been a few years paſt; from the preſent taſte for theſe whole-blowing Flake flowers, many

of the old varieties, which had been turned out of the gardens of the floriſts many years ago, to make room for the large flowers, which were then in faſhion, have been received again; and large prices have been paid of late for ſuch flowers as ſome years ago were ſold for one ſhilling a dozen, or leſs, which is a ſtrong proof of the variableneſs of the fancies of the floriſts.

But I ſhall now proceed to give ſome directions for propagating theſe flowers by layers, and the neceſſary care to be taken in order to blow them fair and large.

The beſt ſeaſon for laying theſe flowers is in June, as ſoon as the ſhoots are ſtrong enough for that purpoſe, which is performed in the following manner: after having ſtripped off the leaves from the lower part of the ſhoot intended to be laid, make choice of a ſtrong joint about the middle part of the ſhoot (not too near the heart of the ſhoot, nor in the hard part next the old plant); then with your penknife make a ſlit in the middle of the ſhoot from the joint upwards half way to the other joint, or more, according to their diſtance; then with your knife cut the tops of the leaves, and alſo cut off the ſwelling part of the joint where the ſlit is made, ſo that the part ſlit may be ſhaped like a tongue; for if that outward ſkin is left on, it would prevent their puſhing out roots; then having looſened the earth round the plant, and, if need be, raiſed it with freſh mould, that it may be level with the ſhoot intended to be laid down, leſt by the ground being too low, by forcing down the ſhoot you ſplit it off; then with your finger make a hollow place in the earth, juſt where the ſhoot is to come, and with your thumb and finger bend the ſhoot gently into the earth, obſerving to keep the top as upright as poſſible, that the ſlit may be open; and being provided with forked ſticks for that purpoſe, thruſt one of them into the ground, ſo that the forked part may take hold of the layer, in order to keep it down in its proper place; then gently cover the ſhank of the layer with the ſame ſort of earth, giving it a gentle watering to ſettle the earth about it, obſerving to repeat the ſame as often as is neceſſary, in order to promote their rooting. In about five or ſix weeks after this, the layers will have taken root ſufficient to be tranſplanted; againſt which time you ſhould be provided with proper earth for them, which may be compoſed after the following manner:

Make choice of ſome good up-land paſture, or a common that is of a hazel earth, or light ſandy loam; dig from the ſurface of this your earth about eight inches deep, taking all the turf with it; let this be laid in a heap to rot and mellow for one year, turning it once a month, that it may ſweeten; then mix about a third part of rotten neats dung, or for want of that, ſome rotten dung from a Cucumber or Melon-bed; let this be well mixed together, and if you can get it time enough before-hand, let them lie mixed ſix or eight months before it is uſed, turning it ſeveral times, the better to incorporate their parts.

Obſerve, that although I have mentioned this mixture as the beſt for theſe flowers, yet you muſt not expect to blow your flowers every year equally large in the ſame compoſition; therefore ſome people who are extremely fond of having their flowers ſucceed well, alter their compoſitions every year in this manner, viz. one year they mix the freſh earth with neats dung, which is cold; the next year with rotten horſe dung, which is of a warmer nature, adding thereto ſome white ſea ſand to make the earth lighter.

But, for my part, I ſhould rather adviſe the planting two or three layers of each of the beſt kinds in a bed of freſh earth not over dunged, which plants ſhould only be ſuffered to ſhew their flowers, that you may be ſure they are right in their kind and colours; and when you are ſatisfied in that particular, cut off the flower-ſtems, and do not ſuffer them to ſpend the roots in blowing, by which means you will ſtrengthen your layers. And it is from theſe beds I would make choice of ſome of the beſt plants for the next year's blowing, always obſerving to have a ſucceſſion of them yearly, by which means you may have every year fine flowers, provided the ſeaſon proves favourable: for it is not reaſonable to ſuppoſe, that the layers taken from ſuch roots as have been exhauſted in producing large flowers, and have been forced by art to the utmoſt of their natural ſtrength, ſhould be able to produce flowers equally as large as their mother root did the year before, or as ſuch layers as are freſh from a poorer ſoil, and in greater health can do. But this being premiſed, let us proceed to the planting of theſe layers, which (as I ſaid before) ſhould be done in Auguſt, or the beginning of September.

The common method uſed by moſt floriſts is, to plant their layers at this ſeaſon, two in each pot (the ſize of which pots are about nine inches over in the clear at the top); in theſe pots they are to remain for bloom; and therefore, in the ſpring of the year, they take off as much of the earth from the ſurface of the pots as they can, without diſturbing their roots, filling the pots up again with the ſame good freſh earth as the pots were before filled with. But there is ſome difficulty in ſheltering a great quantity of theſe flowers in winter, when they are planted in ſuch large pots, which in moſt winters they will require, more or leſs; my method therefore is, to put them ſingly into halfpenny pots in autumn, and in the middle or latter end of October, to ſet theſe pots into a bed of old tanners bark, which has loſt its heat, and cover them with a common frame (ſuch as is uſed for raiſing Cucumbers and Melons); and in two of theſe frames, which contain ſix lights, may be ſet a hundred and fifty of theſe pots: in theſe frames you may give them as much free air as you pleaſe, by taking off the lights every day when the weather is mild, and putting them on only in bad weather and great rains; and if the winter ſhould prove ſevere, it is only the covering the glaſſes with mats, ſtraw, or Peaſe-haulm, ſo as to keep out the froſt, which will effectually preſerve your plants in the utmoſt vigour.

In the middle or latter end of February, if the ſeaſon is good, you muſt tranſplant theſe layers into pots for their bloom (the ſize of which ſhould be about eight inches over at the top in the clear); in the doing of which, obſerve to put ſome potſherds or oyſter-ſhells over the holes in the bottoms of the pots, to keep the earth from ſtopping them, which would detain the water in the pots to the great prejudice of the flowers: then fill theſe pots about half way with the ſame good compoſt as was before directed, and ſhake the plants out of the ſmall pots with all the earth about the roots; then with your hands take off ſome of the earth round the outſide of the ball, and from the ſurface taking off the fibres of the roots on the outſide of the ball of earth; then put one good plant exactly in the middle of each pot, ſo that it may ſtand well as to the height, i. e. not ſo low as to bury the leaves of the plant with earth, nor ſo high, that the ſhank may be above the rim of the pot; then fill the pot up with the earth before-mentioned, cloſing it gently to the plant with your hands, giving it a little water, if the weather is dry, to ſettle the earth about it; then place theſe pots in a ſituation where they may be defended from the north wind, obſerving to give them gentle waterings, as the ſeaſon may require.

In this place they may remain till the middle or latter end of April, when you ſhould prepare a ſtage of boards to ſet the pots upon, which ſhould be ſo ordered as to have little ciſterns of water round each poſt, to prevent the inſects from getting to your flowers in their bloom, which, if they are ſuffered to do, will mar all your labour, by deſtroying all your flowers in a ſhort time; the chief and moſt miſchievous inſect in this caſe is, the earwig, which will gnaw off all the lower parts of the petals of the flowers (which are very ſweet) and thereby cauſe the whole flower to fall to pieces; but ſince the making one of theſe ſtages is ſomewhat expenſive, and not very eaſy to be underſtood

derſtood by ſuch as have never ſeen them, I ſhall deſcribe a very ſimple one, which I have uſed for ſeveral years, which anſwers the purpoſe full as well as the beſt and moſt expenſive one can do: firſt, prepare ſome common flat pans, about fourteen or ſixteen inches over, and three inches deep; place theſe two and two oppoſite to each other, at about two feet diſtance, and at every eight feet lengthways, two of theſe pans; in each of theſe whelm a flower-pot, which ſhould be about ſix inches over at the top, upſide-down, and lay a flat piece of timber, about two feet and a half long, and three inches thick, croſs from pot to pot, till you have finiſhed the whole length of your ſtage; then lay your planks lengthways upon theſe timbers, which will hold two rows of planks for the ſize pots which were ordered for the Carnations; and when you have ſet your pots upon the ſtage, fill the flat pans with water, always obſerving, as it decreaſes in the pans, to repleniſh it, which will effectually guard your flowers againſt inſects; for they do not care to ſwim over water, ſo that if by this, or any other contrivance, the paſſage from the ground to the ſtage, on which the pots are placed, is defended by a ſurface of water three or four inches broad, and as much in depth, it will effectually prevent theſe vermin from getting to the flowers.

This ſtage ſhould be placed in a ſituation open to the ſouth-eaſt, but defended from the weſt winds, to which theſe ſtages muſt not be expoſed, leſt the pots ſhould be blown down by the violence of that wind, which is often very troubleſome at the ſeaſon when theſe flowers blow; indeed they ſhould be defended by trees at ſome diſtance, from the winds of every point; but theſe trees ſhould not be too near the ſtage, nor by any means place them near walls, or tall buildings, for in ſuch ſituations the ſtems of the flowers will draw up too weak. About this time, viz. the middle of April, your layers will begin to ſhoot up for flower; you muſt therefore be provided with ſome ſquare deal ſticks, about four feet and a half long, which ſhould be thicker toward the bottom, and planed off taper at the top; theſe ſticks ſhould be carefully ſtuck into the pots as near as poſſible to the plant, without injuring it; then with a ſlender piece of baſs mat, faſten the ſpindle to the ſtick to prevent its being broken; this you muſt often repeat, as the ſpindle advances in height, and alſo obſerve to pull off all ſide ſpindles as they are produced, and never let more than two ſpindles remain upon one root, nor above one, if you intend to blow exceeding large. Toward the beginning of June your flowers will have attained their greateſt height, and their pods will begin to ſwell, and ſome of the earlieſt begin to open on one ſide; you muſt therefore obſerve to let it open in two other places at equal angles; this muſt be done ſo ſoon as you perceive the pod break, otherwiſe your flower will run out on one ſide, and be in a ſhort time paſt recovering, ſo as to make a complete flower, and in a few days after the flowers begin to open, you muſt cover them with glaſſes which are made for that purpoſe, in the following manner:

Upon the top of the glaſs, exactly in the center, is a tin collar, or ſocket, about three fourths of an inch ſquare, for the flower-ſtick to come through; to this ſocket are ſoldered eight ſlips of lead at equal diſtances, which are about ſix inches and a half long, and ſpread open at the bottom about four inches aſunder; into theſe ſlips of lead are faſtened ſlips of glaſs, cut according to the diſtances of the lead, which, when they are fixed in, are bordered round the bottom with another ſlip of lead quite round, ſo that the glaſs hath eight angles, with the ſocket in the middle, and ſpread open at the bottom about eleven inches wide.

When your flowers are open enough to cover with theſe glaſſes, you muſt make a hole through your flower-ſtick, exactly to the height of the under part of the pod, through which you ſhould put a piece of ſmall wire about ſix inches long, making a ring at one end of the wire to contain the pod, into which ring you ſhould fix the ſtem of the flower; then cut off all the tyings of baſs, and thruſt the ſtem of the flower ſo far from the ſtick, as may give convenient room for the flower to expand without preſſing againſt the ſtick; to which diſtance you may fix it, by turning your wire ſo as not to draw back through the hole; then make another hole through the ſtick, at a convenient diſtance above the flower, through which you ſhould put a piece of wire, an inch and a half long, which is to ſupport the glaſſes from ſliding down upon the flowers; and be ſure to obſerve, that the glaſſes are not placed ſo high as to admit the ſun and rain under them to the flowers, nor ſo low as to ſcorch their leaves with the heat. At this time alſo, or a few days after, as you ſhall judge neceſſary, you ſhould cut ſome ſtiff paper, cards, or ſome ſuch thing, into collars about four inches over, and exactly round, cutting a hole in the middle of it about three fourths of an inch diameter, for the bottom of the flower to be let through; then place theſe collars about them, to ſupport the petals of the flower from hanging down; this collar ſhould be placed with inſide the calyx of the flower, and ſhould be ſupported thereby; then obſerve from day to day what progreſs your flowers make; and if one ſide comes out faſter than the other, you ſhould turn the pot about, and ſhift the other ſide towards the ſun; and alſo if the weather proves very hot, you ſhould ſhade the glaſſes in the heat of the day with Cabbage leaves, &c. to prevent their being ſcorched, or forced out too ſoon; and when the middle pod begins to riſe, you ſhould take out the calyx thereof with a pair of nippers made for that purpoſe; but this ſhould not be done too ſoon, leſt the middle part of the flower ſhould advance too high above the ſides, which will greatly diminiſh the beauty of it: and you ſhould alſo obſerve whether there are more leaves in the flower, than can properly be expanded for want of room; in which caſe you ſhould put out ſome of the lowermoſt or moſt unlikely leaves to ſpread, drawing out and expanding the others at the ſame time: and when your flowers are fully blown, if you cut them off, you ſhould put on a freſh collar of ſtiff paper, which ſhould be cut exactly to the ſize of the flower, that it may ſupport the petals to their full width, but not to be ſeen wider than the flower in any part: when this is put on, you muſt draw out the wideſt leaves to form the outſide of the flower, which although they ſhould be in the middle (as it often happens,) yet by removing the other leaves they may be drawn down, and ſo the next longeſt leaves upon them again, that the whole flower may appear equally globular without any hollow parts. In the doing of this, ſome floriſts are ſo curious as to render an indifferent flower very handſome; and on this depends, in a great meaſure, the ſkill of the artiſt to produce large fine flowers.

During the flowering ſeaſon, particular care ſhould be taken not to let them ſuffer for want of water, which ſhould by no means be raw ſpring water; nor do I approve of compound waters, ſuch as are enriched with various ſorts of dung; but the beſt and moſt natural water is that of a fine ſoft river; next to that is pond water, or ſtanding water; but if you have no other than ſpring water, it ſhould be expoſed to the ſun and air two days before it is uſed, otherwiſe it will give the flowers the canker and ſpoil them.

The directions here given are chiefly for the management of thoſe large Carnations, which require the greateſt ſkill of the floriſts, to have them in perfection; but as of late years theſe have not been ſo much in eſteem as formerly, and thoſe flowers which do not break their pods, and are termed whole Blowers, have now the preference. Theſe are generally planted in pots, and treated in the ſame way as the large flowers, but do not require ſo much trouble to blow them: all that is neceſſary to be done for theſe, is to faſten their ſtems up to flower-ſticks to prevent their being

being broken, and to take off the pods which proceed from the ſide of the ſtalks, leaving only the top bud to flower, if they are intended to be large and fair; and when the flowers begin to open, if they are ſcreened from the ſun in the heat of the day, and alſo from wet, they will continue much longer in beauty.

But although the moſt valuable of theſe flowers are uſually planted in pots, and thus carefully treated, yet many of theſe whole blowing flowers may be planted in beds, or borders of the flower-garden, where they are ſome of the principal ornaments during their continuance in flower, which is from the beginning of July till the middle of Auguſt, eſpecially if the ſeveral colours are properly intermixed; for the Flakes and Bizarrs ſhould be intermixed with the Picquettes, and not planted ſeparate, unleſs where they are deſigned for ſaving the ſeeds; in which caſe, thoſe which are the fineſt of each ſort, ſhould be planted in beds at a diſtance from each other, eſpecially where perſons are deſirous to keep them diſtinct; for where the ſorts are blended together, there will be an admixture of their farina, ſo that the ſeeds will vary, and not produce the particular kinds; though I do not remember ever to have ſeen any Flake flowers ariſe from ſeeds of the Picquettes, nor vice versâ.

The flowers which are planted in the full ground, generally produce ſeeds better than thoſe in pots; but whoever propoſes to raiſe a ſupply of new flowers from ſeeds, muſt always obſerve to ſave the beſt of their ſeedling flowers for this purpoſe; for it is well known, that after any of theſe flowers have been a few years propagated by layers, they become barren, and do not ſeed; which is alſo the caſe with moſt other plants which are propagated by ſlips, layers, or cuttings; ſo that the young plants which have been newly obtained from ſeeds, are always the moſt productive of ſeeds: the plants which are propagated by layers or ſlips, will always continue to produce the ſame flowers, ſo that when a fine variety is obtained, it is this way propagated and maintained; but all the new varieties come from ſeeds, ſo that all thoſe who are curious in theſe flowers, annually ſow their ſeeds.

I ſhall next proceed to the culture of that ſpecies, which is commonly known by the title of Sweet William; of this there are a great variety of different colours, which are ſingle, and three or four with double flowers: ſome of theſe have narrow leaves, which were formerly titled Sweet Johns, but of late that diſtinction has not been made, becauſe they are found to vary when raiſed from ſeeds.

Some of the ſingle flowers have very rich colours, which frequently vary in thoſe of the ſame bunch; there are others with fine variegated flowers, and others whoſe middles are of a ſoft red, bordered with white, which are called Painted Ladies; but where perſons are deſirous to preſerve any of theſe varieties in perfection, the beſt flowers of each ſhould be particularly marked, and no other permitted to ſtand near them, leſt their farina ſhould impregnate them, which would cauſe them to vary.

That which is called the Painted Lady Sweet William, is a very beautiful variety; the ſtalks of this do not riſe ſo high as moſt of the other; the bunches of flowers are larger, and produced more in the form of an umbel, the flowers ſtanding equal in height, make a better appearance: there are others whoſe ſtalks riſe three feet high, and the flowers of a very deep red or ſcarlet colour. Theſe all flower at the ſame time with the Carnations, which renders them leſs valuable, becauſe they have no ſcent.

The ſingle kinds of theſe flowers are generally propagated by ſeeds, which muſt be ſown the latter end of March or the beginning of April, in a bed of light earth, and in June they will be fit to tranſplant out; at which time you muſt prepare ſome beds ready for them, and ſet them at ſix inches diſtance every way: in theſe beds they may remain till Michaelmas, at which time they may be tranſplanted into the borders of the pleaſure-garden or wilderneſs.

Theſe will flower the next year in June, and perfect their ſeeds in Auguſt, which you ſhould ſave from the beſt coloured flowers for a ſupply.

They may be alſo propagated by ſlipping their roots at Michaelmas; but this is ſeldom practiſed, ſince their ſeedling roots will always blow the ſtrongeſt, and new varieties are obtained yearly.

The four ſorts with double flowers are, 1. The broad-leaved ſort, which hath very double flowers, of a deep purple colour inclining to blue, which burſts its pods, ſo that it is not ſo much eſteemed as the others, and therefore has been leſs regarded, and is now almoſt totally baniſhed the gardens of the curious. 2. The Double Roſe Sweet William, whoſe flowers are of a fine deep Roſe colour, and ſmell ſweet; this is much valued for the beauty and ſweetneſs of its flowers; the empalement (or pods) of theſe flowers never burſt, ſo the flowers remain with their petals fully expanded, and do not hang down looſely as thoſe of the former. 3. The Mule, or Fairchild's Sweet William; it hath narrower leaves than either of the former, and is of that variety called Sweet John: this was ſaid to have been produced from ſeeds of a Carnation, which had been impregnated by the farina of the Sweet William; the flowers of this are of a brighter red colour than either of the former, their bunches are not quite ſo large, but the flowers have an agreeable odour. The fourth ſort has fine variegated flowers.

The double kinds are propagated by layers, as the Carnations; they love a middling ſoil, not too light, nor too heavy or ſtiff, nor too much dunged, which very often occaſions their rotting: theſe continue flowering for a long time, and are extremely beautiful, eſpecially the Mule, which produces two full blooms of flowers, one in June, and the other in July. This is very ſubject to canker and rot away, eſpecially if planted in a ſoil over wet or too dry, or if watered with ſharp ſpring water. Theſe flowers being planted in pots, are very proper to adorn court-yards at the time they are in flower.

The China Pink is generally ſuppoſed an annual plant, becauſe the plants which are raiſed from ſeeds flower and produce ripe ſeeds the ſame ſeaſon, ſo their roots are not often preſerved; but where they are planted on a dry ſoil, they will continue two years, and the ſecond year will produce a greater number of flowers than the firſt. There are a great variety of very rich colours in theſe flowers, which annually vary when raiſed from ſeeds. The double flowers of this ſort are moſt eſteemed, though the colours of the ſingle are more diſtinct and beautiful; for the multiplicity of petals in the double flowers, in a great meaſure, hides the deep ſhades, which are toward the lower part of the petals.

Theſe plants are propagated by ſeeds, which ſhould be ſown upon a gentle hot-bed about the beginning of April; this moderate heat is only intended to forward the vegetation of the ſeeds, therefore when the plants come up, they muſt have a large ſhare of air admitted to them, to prevent their drawing up weak; and as ſoon as the weather will permit, they muſt be expoſed to the open air; in about three weeks or a month after, the plants will be fit to remove; then they ſhould be carefully taken up with good roots, and planted in a bed of rich earth, at about three inches aſunder, being careful to ſhade them from the ſun till they have taken new root, and in dry weather they muſt have water three or four times a week. The farther care is to keep them clean from weeds till the end of May, at which time they may be tranſplanted to the places where they are deſigned to remain for flowering, when they may be taken up with large balls of earth to their roots, ſo as ſcarcely to feel their removal, eſpecially if it happens to rain at that time.

As theſe plants do not grow large, ſo when they are planted ſingly in the borders of the flower-garden, they do not make ſo fine an appearance, as where they are planted by themſelves in beds; or if they are

planted

planted in ſmall clumps, of ſix or eight roots in each, where the flowers being of different colours, ſet off each other to advantage.

Thoſe who are curious in theſe flowers, take particular care in ſaving their ſeeds, for they never permit any ſingle flowers to ſtand among their double, but pull them up as ſoon as they ſhew their flowers, and alſo draw out all thoſe which are not of lively good colours; where this is obſerved, the flowers may be kept in great perfection; but where perſons have truſty friends, who live at ſome diſtance, with whom they can exchange ſeeds once in two or three years, it is much better ſo to do, than to continue ſowing ſeeds in the ſame place many years in ſucceſſion, and this holds true in moſt ſorts of ſeeds: but the great difficulty is to meet with an honeſt perſon of equal ſkill, who will be as careful in the choice of his plants for ſeed, as if he was to ſow them himſelf.

DIAPENSIA. See SANICULA.

DICTAMNUS. Lin. Gen. Plant. 468. Fraxinella. Tourn. Inſt. R. H. 430. tab. 243. White Dittany, or Fraxinella; in French, *Fraxinelle.* This plant was titled Fraxinella, from Fraxinus the Aſh-tree, the leaves of this having ſome reſemblance in their form, to thoſe of the Aſh-tree, ſo it was called Little Aſh. But as this plant has been long mentioned under the title of Dictamnus albus, i. e. *White Dittany* in the diſpenſaries, ſo Dr. Linnæus has adapted that title to this genus.

The CHARACTERS are,

The empalement of the flower is compoſed of five ſmall oblong leaves, ending in points. The flower hath five oblong petals which are unequal, two of them turning upward, two are oblique on the ſides, and one turns downward. It hath ten riſing ſtamina, which are as long as the petals, which are ſituated between the two ſide petals; they are not equal in length, and are terminated by obtuſe four-cornered ſummits ſtanding erect. In the center is ſituated a five-cornered germen, ſupporting a ſhort incurved ſtyle, crowned by an acute ſtigma; the germen afterward becomes a capſule with five cells, each having a compreſſed margin, which ſpreads open at their exterior parts, but join together at their inner, opening with two valves, and incloſing ſeveral roundiſh, hard, ſhining ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flower having ten ſtamina and one ſtyle.

We have but one diſtinct SPECIES of this genus, viz.

DICTAMNUS (*Albus*). Hort. Cliff. 161. Fraxinella. Cluſ. Hiſt. 99. and the Dictamnus albus, vulgò Fraxinella. C. B. P. 222. *White Dittany, commonly called Fraxinella.*

There are three varieties of this plant, one with a pale red flower ſtriped with purple, another with a white flower, and one with ſhorter ſpikes of flowers; but as I have obſerved them to vary when propagated by ſeeds, ſo I eſteem them only ſeminal varieties.

This is a very ornamental plant for gardens, and as it requires very little culture, ſo deſerves a place in all good gardens. It hath a perennial root, which ſtrikes deep into the ground, and the head annually increaſes in ſize; theſe ſend up many ſtalks, which riſe from two to three feet high, garniſhed with winged leaves placed alternate, compoſed of three or four pair of oblong lobes, terminated by an odd one: they are ſmooth and ſtiff, ſitting cloſe to the midrib, which hath a longitudinal furrow on the upper ſide; the lobes (or ſmall leaves) placed on each ſide the midrib, are oblique, but thoſe which terminate the leaf have their ſides equal. The flowers are produced in a long pyramidal looſe ſpike or thyrſe; on the top of the ſtalk, which is nine or ten inches long; the flowers of one ſort is white, and of the other they are of a pale red, marked with red or purple ſtripes. The whole plant when gently rubbed, emits an odour like that of Lemon peel, but when bruiſed has ſomething of a balſamic ſcent. It flowers the latter end of May, and in June, and the ſeeds ripen in September.

Theſe plants are propagated by ſeeds, which, if ſown

in the autumn ſoon after they are ripe, the plants will appear the following April; but when they are kept out of the ground till the ſpring, the ſeeds ſeldom ſucceed; or if they do grow, it is the following ſpring before the plants appear, ſo that a whole year is loſt. When the plants come up, they muſt be conſtantly kept clean from weeds; and in the autumn when their leaves decay, the roots ſhould be carefully taken up, and planted in beds at ſix inches diſtance every way; theſe beds may be four feet broad, and the paths between them two, that there may be room enough to paſs between the beds to weed them. In theſe beds the plants may ſtand two years, during which time they muſt be conſtantly kept clean from weeds; and if they thrive well, they will be ſtrong enough to flower; ſo in the autumn they ſhould be carefully taken up, and planted in the middle of the borders of the flower-garden, where they will continue thirty or forty years, producing more ſtems of flowers in proportion to the ſize of the roots. All the culture theſe require, is to be kept clean from weeds, and the ground about them dug every winter.

The roots of this plant are uſed in medicine, and eſteemed cordial and cephalic, reſiſting putrefaction and poiſon, and are uſeful in malignant and peſtilential diſtempers, as alſo in epilepſies.

DICTAMNUS CRETICUS. See ORIGANUM.

DIERVILLA. Tourn. Act. R. Par. 1706. Lonicera. Lin. Gen. Plant. 210.

The title of this genus was given it by Dr. Tournefort, after Mr. Dierville, a ſurgeon, who brought this plant from Acadia.

The CHARACTERS are,

The empalement of the flower is cut into five parts, almoſt to the bottom; the flower is of one leaf, having a tube at the bottom, but is cut into five parts at the top, and has the appearance of a lip flower; it hath five ſtamina, which are terminated by oblong ſummits, which are equal with the petal. At the bottom of the flower is ſituated an oval germen fixed to the empalement, ſupporting a ſlender ſtyle equal with the ſtamina, crowned by an obtuſe ſtigma; the germen afterward becomes a pyramidal berry, divided into four cells, which contain ſmall round ſeeds.

This genus of plants is ranged in the fourth ſection of Tournefort's third claſs, which includes the plants with a tubulous anomalous flower of one leaf. It is ranged by Dr. Linnæus under his genus of Lonicera, in the firſt ſection of his fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

We know but one SPECIES of this genus at preſent, viz.

DIERVILLA (*Lonicera*) Acadienſis fruticoſa, flore luteo. Act. R. Par. 1706. *Shrubby Diervilla of Acadia with a yellow flower.* This is the Lonicera racemis terminalibus foliis ſerratis. Lin. Sp. Plant. 275. *Lonicera with bunches of flowers terminating the branches, and ſawed leaves.*

This plant grows naturally in the northern parts of America, from whence it was brought to Europe, and is now propagated in the gardens for ſale. It hath woody roots which ſpread far in the ground, and put out ſhoots at a diſtance from the principal ſtalk, whereby it multiplies greatly: the ſtalks are ligneous, and ſeldom riſe more than a foot and a half high; theſe are garniſhed with oblong heart-ſhaped leaves, ending in acute points; they are very ſlightly ſawed on their edges, and are placed oppoſite, ſitting cloſe to the ſtalks: the upper part of the ſtalks are garniſhed with flowers, which uſually come out from the ſide of the ſtalk at the ſitting on of the leaves, and alſo at the top of the ſtalks; there are two or three flowers ſuſtained upon each foot-ſtalk: they are of a pale yellow, and being ſmall, make no great appearance. Theſe come out in May, and if the ſeaſon proves moiſt and cold, they frequently flower again in Auguſt.

It is eaſily propagated by ſuckers, which it ſends out in plenty, and loves a moiſt ſoil and ſhady ſituation, where the cold will never injure it.

DIGITALIS. Lin. Gen. Plant. 676. Tourn. Inſt. R. H. 164. tab. 73. Raii Meth. Plant. 89. Foxglove; in French, *Digitale*.

The CHARACTERS are,

It hath a permanent empalement, which is cut into five parts; the flower is bell-ſhaped, of one petal, with a large open tube, whoſe baſe is cylindrical and contracted, but the brim is divided into four parts ſlightly; the upper lip ſpreading and indented at the top, the lower is larger. It hath four ſtamina, which are inſerted in the baſe of the petal, two being longer than the other, which are terminated by bipartite acuminated ſummits; the flower being paſt, the germen ſwells to an oval capſule, having two cells ſitting on the empalement, incloſing many ſmall angular ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhorter ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. DIGITALIS (*Purpurea*) calycinis foliolis ovatis acutis, corollis obtuſis, labio ſuperiore integro. Hort. Upſal. 178. *Foxglove whoſe ſmall leaves of the empalement are oval and acute, the petals obtuſe, and the upper lip entire.* Digitalis purpurea folio aſpero. C. B. P. 243. *Purple Foxglove with a rough leaf, or common Foxglove.*
2. DIGITALIS (*Thapſi*) foliis decurrentibus. Lin. Sp. 867. *Foxglove with running leaves.* Digitalis Hiſpanica purpurea minor. Tourn. Inſt. 165. *Leſſer Spaniſh purple Foxglove.*
3. DIGITALIS (*Lutea*) calycinis foliolis lanceolatis corollis acutis labio ſuperiore bifido. Hort. Upſal. 178. *Foxglove with ſpear-ſhaped leaves to the empalement, an acute petal, whoſe upper lip is bifid.* Digitalis minor lutea, parvo flore. C. B. P. 244. *Leſſer yellow Foxglove with a ſmall flower.*
4. DIGITALIS (*Magno flore*) foliolis calycinis linearibus, corollis acutis, labio ſuperiore integro, foliis lanceolatis. *Foxglove with long narrow leaves to the empalement, an acute petal, whoſe upper lip is entire, and ſpear-ſhaped leaves.* Digitalis lutea, magno flore. C. B. P. 244. *Yellow Foxglove with a larger flower.*
5. DIGITALIS (*Ferruginea*) calycinis foliolis ovatis obtuſis, corollæ labio inferiore longitudine floris. Lin. Sp. Plant. 622. *Foxglove with oval blunt leaves to the empalement, and the lower lip of the petal as long as the flower.* Digitalis anguſtifolia, flore ferrugineo. C. B. P. 244. *Narrow-leaved Foxglove with an iron-coloured flower.*
6. DIGITALIS (*Canarienſis*) calycinis foliolis lanceolatis, corollis bilabiatis acutis, caule fruticoſo. Lin. Sp. Plant. 622. *Foxglove with ſpear-ſhaped leaves to the empalement, an acute petal with two lips, and a ſhrubby ſtalk.* Digitalis acanthoides Canarienſis fruteſcens, flore aureo. Hort. Amſt. 2. p 105. *Shrubby Canary Foxglove like Bearſbreech, with a golden flower.*
7. DIGITALIS (*Orientalis*) calycinis foliolis acutis, foliis ovato-lanceolatis nervoſis. *Foxglove with acute leaves to the empalement, and oval, ſpear-ſhaped, veined leaves.* Digitalis lutea non ramoſa, ſcorzoneræ folio. Buxb. Cent. 25. *Yellow unbranched Foxglove with a leaf like Scorzonera.*

The firſt ſort grows naturally by the ſide of hedges in ſhady woods in moſt parts of England, ſo is rarely cultivated in gardens. This is a biennial plant, which the firſt year produces a great tuft of long rough leaves which are hairy; the ſecond year it ſhoots up a ſtrong herbaceous ſtalk, which riſes from three to four feet high, garniſhed with leaves of the ſame form as the lower, but they gradually leſſen upward, ſo thoſe which are intermixed with the flowers on the top are very narrow. The flowers grow in a long looſe thyrſe, ſtanding only on one ſide of the ſtalk; they are large, tubulous, and ſhaped like a thimble, of a purple colour, with ſeveral white ſpots on the under lip; theſe flowers are ſucceeded by oval capſules with two cells, which are filled with dark brown ſeeds. It flowers in June, and the ſeeds ripen in autumn; if they are permitted to ſcatter, the plants will come up in the ſpring, and become troubleſome weeds; but whoever has a mind to cultivate it, ſhould ſow the ſeeds in autumn, for thoſe which are ſown in the ſpring ſeldom ſucceed, or at leaſt lie one year in the ground before they grow. This plant ſtands in the liſt of medicinal ſimples of the diſpenſaries, and there is an ointment made of the flowers, and May-butter, which has been in good eſteem.

There is a variety of this with a white flower, which is found growing naturally in ſome parts of England, which differs from this only in the colour of the flower and leaves; but this difference is permanent, for I have cultivated it more than thirty years in the garden, and have never found it vary.

The ſecond ſort grows naturally in Spain, from whence I received the ſeeds; this plant ſeldom riſes much more than a foot and a half high; the lower leaves are ten inches long, and three broad in the middle; they are ſoft, woolly, and roughly veined on their under ſide; the ſtalks are garniſhed with leaves of the ſame ſhape, but ſmaller; the upper part of the ſtalk hath a ſhort thyrſe of purple flowers like thoſe of the common ſort, but they are ſmaller, and the ſegments of the petal are acute. This plant retains its difference when cultivated in gardens.

The third ſort hath very long obtuſe leaves near the root; the ſtalk is ſmall, and riſes from two to three feet high, the lower part being pretty cloſely garniſhed with ſmooth leaves, about three inches long and one broad, ending in obtuſe points: the upper part of the ſtalk, for ten inches in length, is adorned with ſmall yellow flowers, which are cloſely ranged on one ſide of the ſtalk, having a few very ſmall acute leaves placed between them, which are ſituated on the oppoſite ſide of the ſtalk; the upper lip of the flower is entire, and the petal is obtuſe. It flowers in June, and the ſeeds ripen in autumn.

The fourth ſort hath long ſmooth-veined leaves at the bottom; the ſtalk is ſtrong, and riſes two feet and a half high, garniſhed with leaves which are five inches long, one and a half broad, ending in acute points; theſe have many longitudinal veins, and are ſlightly ſawed on their edges; the upper part of the ſtalk is adorned with large yellow flowers, nearly of the ſize of thoſe of the common ſort, the brim having acute points, and the upper lip entire. This flowers and ripens its ſeeds about the ſame time as the former.

The fifth ſort hath narrow ſmooth leaves, which are entire; the ſtalk riſes near ſix feet high, and puts out ſome ſlender branches from the ſide toward the bottom; the lower part of the ſtalks is garniſhed with very narrow ſmall leaves, three inches long, and one third of an inch broad; the flowers terminate the ſtalk, growing in a very long ſpike, with very few leaves between them, and thoſe very ſmall; the empalement is divided into four obtuſe parts, the lower lip extending much longer than the upper. The flowers are of an iron colour, and appear in June.

The ſixth ſort grows naturally in the Canary Iſlands, from whence the ſeeds were firſt brought to England; and many of the plants were raiſed in the biſhop of London's gardens at Fulham, part of which were ſent to the royal gardens at Hampton Court, and ſome were ſent over to the gardens in Holland: thoſe which were ſent to Hampton Court, were preſerved there a few years, but by the ignorance of the gardeners, to whoſe care thoſe gardens were committed, this, with many other valuable plants, were ſoon deſtroyed.

This plant hath a ſhrubby ſtalk which riſes to the height of five or ſix feet, dividing into ſeveral branches, garniſhed with rough ſpear-ſhaped leaves, near five inches long, and two broad in the middle, gradually decreaſing to both ends, having a few ſhort ſerratures on their edges; theſe are placed alternately on the branches; each of theſe branches is terminated by a looſe ſpike of flowers, about four inches in length; the empalement of theſe is cut into five acute ſeg-

ments almoſt to the bottom; the upper lip is long and entire, this is arched, and immediately under it the ſtamina and ſtyle are ſituated; the lower lip is obtuſe, and indented at the top; there are two acute ſegments on the ſide, which compoſe the chaps of the flower; there are two of the ſtamina longer than the other; theſe are crowned with roundiſh ſummits. In the bottom of the flower is ſituated the germen, ſupporting a ſlender ſtyle, crowned by an oval ſtigma; the germen afterward becomes an oval capſule, filled with ſmall angular ſeeds.

This plant begins to flower in May, and there is generally a ſucceſſion of flowers on the ſame plant, till the winter puts a ſtop to them, which renders the plant more valuable. It is propagated by ſeeds, which ſhould be ſown in pots filled with light earth, in the autumn, ſoon after the ſeeds are ripe; theſe pots ſhould be plunged into an old bed of tanners bark, whoſe heat is gone, and in mild weather the glaſſes ſhould be drawn off to admit the air; but in hard rains and froſt they muſt be kept on, to protect the ſeeds from both, which frequently deſtroys them here when they are expoſed; in the ſpring the plants will come up, when they ſhould enjoy the free air in mild weather, but muſt be protected from the cold. When theſe are large enough to tranſplant, they ſhould be each planted into a ſeparate ſmall pot filled with light earth, and placed under the frame till they have taken new root, then they ſhould be gradually inured to the open air. During the ſummer ſeaſon the plants ſhould remain abroad in a ſheltered ſituation, but in the winter they muſt be placed in a greenhouſe, for they will not live abroad in England; they muſt not be kept too warm and cloſe in the houſe, for they only want protection from the froſt; therefore in mild weather, they ſhould have free air conſtantly admitted to them, and they require frequent waterings, but they ſhould not have it in too great plenty in winter.

The ſeventh ſort grows naturally in Tartary, from whence the ſeeds were ſent to the imperial garden at Peterſburgh, and from thence I received them. This plant hath many oval ſpear-ſhaped leaves, which are ſmooth, ariſing from the root; between theſe ariſe the ſtalk, which grows about a foot high, and is garniſhed below with ſmooth ſpear-ſhaped leaves, from four to five inches long, and one and a half broad in the middle, leſſening gradually at both ends; theſe have no foot-ſtalks, but their baſe embraces the ſtalks half round; the upper part of the ſtalk is adorned by a ſhort looſe ſpike of yellow flowers, which are almoſt as large as thoſe of the great yellow ſort before-mentioned, but they are ſhorter. This flowers in May, and the ſeeds ripen in autumn.

All theſe ſorts ſhould be ſown in the autumn; for if the ſeeds are ſown in the ſpring, they commonly fail, or at leaſt lie a whole year in the ground before they vegetate. The plants are biennial (except the ſeventh ſort) and generally periſh ſoon after the ſeeds are ripe.

DIOSCOREA. Plum. Nov. Gen. 9. tab. 26. Lin. Gen. Plant. 995.

The CHARACTERS are,

It hath male and female flowers in different plants; the male flowers have a bell-ſhaped perianthium of one leaf, cut into ſix parts, but have no petals or empalement; they have ſix ſhort hairy ſtamina, terminated by ſingle ſummits. The female flowers have the ſame perianthium as the male; they have no petals, but have a ſmall three-cornered germen, ſupporting three ſtyles, which are crowned by ſingle ſtigmas; the perianthium afterward becomes a triangular capſule with three cells, opening with three valves, containing two compreſſed bordered ſeeds in each.

This genus of plants is ranged in the ſixth ſection of Linnæus's twenty-ſecond claſs, intitled Dicœcia Hexandria. The plants of this claſs and ſection have male and female flowers on different plants, and the male flowers have ſix ſtamina.

The SPECIES are,

1. DIOSCOREA (*Sativa*) foliis cordatis alternis, caule lævi tereti. Hort. Cliff. 459. *Dioſcorea with heart-ſhaped leaves placed alternate, and a ſmooth taper ſtalk.* Dioſcorea ſcandens, foliis tamni fructu racemoſo. Plum. Nov. Gen. 9. *Climbing Dioſcorea with black Briony leaves, and fruit growing in long bunches.*
2. DIOSCOREA (*Haſtata*) foliis haſtato-cordatis, caule lævi, racemis longiſſimis. *Dioſcorea with ſpear-pointed heart-ſhaped leaves, a ſmooth ſtalk, and very long bunches of flowers.* Dioſcorea ſcandens, folio haſtato fructu racemoſo. Houſt. MSS. *Climbing Dioſcorea with a ſpear-pointed leaf, and fruit growing in bunches.*
3. DIOSCOREA (*Villoſa*) foliis cordatis alternis, oppoſitiſque caule lævi. Lin. Sp. 1463. *Dioſcorea with heart-ſhaped leaves placed alternate and oppoſite, and a ſmooth ſtalk.* Dioſcorea ſcandens, folio ſubrotundo acuminato fructu racemoſo. Houſt. MSS. *Climbing Dioſcorea with a roundiſh pointed leaf, and fruit growing in long bunches.*
4. DIOSCOREA (*Bulbifera*) foliis cordatis, caule lævi bulbifera. Flor. Zeyl. 360. *Dioſcorea with heart-ſhaped leaves, and a ſmooth ſtalk bearing bulbs.* Volubilis nigra, radice albâ aut purpureâ maxima tuberoſa eſculenta, caule membranulis extantibus alato, folio cordato nervoſo. Sloan. Cat. Jam. 46. *The Yam, or Yammes.*
5. DIOSCOREA (*Oppoſitifolia*) foliis oppoſitis ovatis acuminatis. Lin. Sp. 1483. *Dioſcorea with oval-pointed leaves growing oppoſite.*
6. DIOSCOREA (*Digitata*) foliis digitatis. Hort. Cliff. 459. *Dioſcorea with hand-ſhaped leaves.* Nureni Kelengu. Hort. Mal. 7. p. 67.

The firſt ſort grows naturally in moſt of the iſlands in the Weſt Indies. I received the ſeeds of this ſort from Jamaica, where the late Dr. Houſtoun found it growing plentifully. This hath ſlender climbing ſtalks, which fix themſelves to any ſupport near them, and riſe to the height of eighteen or twenty feet, garniſhed with heart-ſhaped leaves, ending with acute points, having five longitudinal veins, which ariſe from the foot-ſtalks, which diverge toward the ſides, but meet again at the point of the leaves. They ſtand upon pretty long foot-ſtalks, from the baſe of which ariſe the branching ſpikes of flowers, which are ſmall, and have no beauty; the female flowers are ſucceeded by three-cornered oblong capſules, having three cells, each containing two compreſſed ſeeds.

The ſecond ſort differs from the firſt in the ſhape of their leaves, theſe having two round ears at their baſe, but the middle extends to an acute point, like that of an halbert. The bunches of flowers are longer, and are looſer placed than thoſe of the former ſort.

The third ſort hath broad, round, heart-ſhaped leaves, which end in acute points; theſe have many longitudinal veins which ariſe from the foot-ſtalk, and diverge to the ſide, but afterward join at the point of the leaf; the flowers come out on long looſe ſtrings, ſtanding on ſhort foot-ſtalks; the female flowers are ſucceeded by three-cornered oblong capſules, with three cells, having compreſſed bordered ſeeds.

The fourth ſort hath triangular winged ſtalks, which trail upon the ground and extend to a great length; theſe frequently put out roots from the joints as they lie upon the ground, whereby the plants are multiplied. The roots of this plant are eaten in many parts of both Indies, where the plants are much cultivated.

The fifth ſort grows naturally in Virginia, and in other parts of North America. This hath a ſmooth ſtalk which climbs on the neighbouring plants, and riſes five or ſix feet high, garniſhed with heart-ſhaped leaves, which are placed oppoſite; they are covered with ſmall hairs, and have ſeveral longitudinal veins. The flowers come out from the ſide of the ſtalk in the ſame manner as the other ſorts, but have no beauty. Theſe plants are preſerved in ſome curious botanic gardens for the ſake of variety; but as they have no beauty, there are few perſons who will allow them a place, eſpecially as moſt of the ſorts require a good ſtove to preſerve them through the winter in England.

Theſe

These plants may be propagated by laying their branches into the ground, which in about three months will put out roots, and may then be taken from the old plants, and planted into separate pots, which should be plunged into the tan-bed in the stove; during the winter these plants should have but little water given them; but in summer, when they are growing vigorously, they should be watered three or four times a week, and in warm weather the glasses should be opened to admit a large share of free air. These plants rarely flower in England, but when the seeds are sent from America, they should be immediately sown in pots, and plunged into a hot-bed, where, if the seeds are sown early in the spring, the plants will come up the same season; but when they are sown late, the seeds often remain in the ground till the following spring before they vegetate; therefore when the plants do not come up the first season, the pots should be screened from the frost the following winter, and put into a new hot-bed in the spring, which will bring up the plants, if the seeds were good. The fourth sort is much cultivated by the inhabitants of the islands in America, and is of great use to them for feeding of their negroes; and the white people make puddings of their roots, when ground to a sort of flour. This plant is supposed to have been brought from the East to the West Indies, for it has not been discovered to grow wild in any part of America; but in the island of Ceylon, and on the coast of Malabar, it grows in the woods, and there are in those places a great variety of sorts.

This sort, which is chiefly cultivated in the West Indies, has a root as big as a man's leg, of an irregular form, and of a dirty brown colour on the outside, but when cut, are white and mealy within. The stalks of this plant are triangular and winged; the leaves are heart-shaped, having two ears, somewhat like those of Arum. These stalks climb to the height of ten or twelve feet, when they grow near trees or shrubs, to which they fasten themselves, otherwise they trail upon the ground.

This plant is propagated by cutting of the root into pieces, observing to preserve an eye or bud to each, as is practised in planting of Potatoes; each of these being planted will grow, and produce three or four large roots. In America they are commonly six or eight months in the ground before the roots are taken up for use. The roots are roasted or boiled, and eaten by the inhabitants, and sometimes are made into bread.

In some curious gardens this plant is preserved for the sake of variety, but it is so tender as not to live in England, unless it is placed in a warm stove. As these roots are frequently brought from America, whoever hath an inclination to preserve the plant, may cut them in the manner before described, and plant each piece in a pot filled with fresh earth, and plunged into a hot-bed of tanners bark, and give them little water until they shoot, lest they should rot. With this management I have had the shoots ten feet high, but the roots have not grown to any great size with me. This plant will not thrive in the open air in the warmest time of the year, so must constantly be kept in the bark-stove.

DIOSMA. Lin. Gen. Plant. 241. Spiræa. Com. Rar. Plant. 2. African Spiræa, vulgò.

The CHARACTERS are,

The flower hath a permanent empalement, which is divided into four acute segments, which are plain at their base; it hath five obtuse petals, which spread open and are as long as the empalement; it hath five stamina terminated by oval erect summits, and a five-pointed hollow nectarium sitting on the germen, from which arises a single style, crowned by an obsolete stigma. The germen afterward becomes a fruit composed of five compressed capsules, which open lengthways, each inclosing one smooth oblong seed.

This genus of plants is ranged in the first section of Linnæus's fifth class, intitled Pentandria Monogynia, the flowers having five stamina and one style.

The SPECIES are,

1. DIOSMA (*Oppositifolius*) foliis subulatis acutis oppositis. Hort. Cliff. 71. *Diosma with acute awl-shaped leaves placed opposite.* Spiræa Africana, foliis cruciatim positis. Com. Rar. Plant. 1. tab. 1. *African Spiræa with leaves placed in form of a cross.*
2. DIOSMA (*Hirsuta*) foliis linearibus hirsutis. Hort. Cliff. 71. *Diosma with narrow hairy leaves.* Spiræa Africana odorata, foliis pilosis. Com. Rar. Plant. 3. tab. 3. *Sweet African Spiræa with hairy leaves.*
3. DIOSMA (*Rubra*) foliis linearibus acutis glabris, carinatis subtus bifarium punctatis. Lin. Sp. Plant. 198. *Diosma with smooth, narrow, acute leaves, which are spotted on their under side.* Spiræa Africana odorato, floribus suaverubentibus. Com. Rar. Plant. 2. *Sweet African Spiræa with soft red flowers.*
4. DIOSMA (*Erricoides*) foliis lineari-lanceolatis subtus convexis, bifariam imbricatis. Lin. Sp. Plant. 198. *Diosma with narrow spear-shaped leaves, which are convex on their under side, and imbricated two ways.* Spiræa Africana ericæ bacciferæ foliis. Raii Hist. 91. *African Spiræa with leaves like the Berry-bearing Heath.*
5. DIOSMA (*Lanceolata*) foliis lanceolatis glabris. Lin. Sp. 287. *Diosma with smooth spear-shaped leaves.* Spiræa Africana, Saturejæ foliis brevioribus. Raii Dendr. 91.

The first sort rises to the height of three feet; the branches are very long and slender, and are produced from the stem very irregularly; the leaves are placed crossways, and are pointed; these are every evening closed up to the branches. The flowers are produced along the branches from between the leaves; and in the evening, when these flowers are expanded, and the leaves are closely embracing the stalks, the whole plant appears as if covered with spikes of white flowers; and as these plants continue a long time in flower, they make a fine appearance when the plants are intermixed with other exotics in the open air.

The second sort has been long known under the title of Spiræa Africana odorata, foliis pilosis, or *Sweet-scented African Spiræa, with hairy leaves.* This sort makes a very handsome shrub, growing to the height of five or six feet; the stalks are woody, sending out many slender branches; the leaves come out alternately on every side, which are narrow-pointed and hairy. The flowers are produced in small clusters at the end of the shoots, which are white; these are succeeded by starry seed-vessels, having five corners, like those of the starry Anise; each of these corners is a cell, having one smooth, shining, oblong, black seed; these seed-vessels abound with a resin, which affords a grateful scent, as doth also the whole plant.

The third sort is of humbler growth than either of the former, seldom rising above three feet high, and spreads out into many branches; the leaves of this sort are smooth, and resemble those of the Heath, and this plant from thence had the name of Erica Æthiopica, &c. given it by Dr. Plukenet: the flowers of this kind are produced in clusters at the end of the branches, like those of the second sort, but are smaller, and the bunches are not so large.

All these plants are propagated by cuttings, which may be planted during any of the summer months, in pots filled with light fresh earth, and plunged into a very moderate hot-bed, where they should be shaded in the day time from the sun, and frequently refreshed with water. In about two months the cuttings will have taken root, when they should be each transplanted into a small pot, and placed in a shady situation until the plants have taken fresh root, when they may be placed among other exotic plants, in a sheltered situation: these plants may remain abroad until the beginning of October or later, if the season continues favourable; for they only require to be sheltered from frost, so that in a dry airy green-house they may be preserved very well in winter, and in summer they may be exposed to the open air with other green-house plants.

These plants grow naturally at the Cape of Good Hope, from whence the seeds were sent to Europe, where

where ſome of the ſpecies have been long preſerved in the gardens of the curious. There have been ſome other ſpecies in the Engliſh gardens than are here enumerated, but theſe are all that are at preſent to be found here.

The ſecond ſort frequently ripens its ſeeds in England; but if the ſeeds are not ſown ſoon after they are ripe, they rarely grow, or they commonly lie a whole year in the ground.

DIOSPYROS. Lin. Gen. Plant. 1027. Guaiacana. Tourn. Inſt. R. H. 600. tab. 371. The Indian Date Plumb.

The CHARACTERS are,

It hath hermaphrodite and female flowers on the ſame plant, and male flowers on ſeparate plants; the hermaphrodite flowers have a large obtuſe permanent empalement of one leaf, which is divided into four parts; the flower hath one petal which is ſhaped like a pitcher, and cut at the brim into four ſegments, which ſpread open; it hath eight ſhort briſtly ſtamina firmly joined to the empalement, terminated by oblong ſummits which have no farina. In the center is ſituated a roundiſh germen, ſupporting a ſingle quadrifid ſtyle, crowned by an obtuſe bifid ſtigma; the germen afterward becomes a large globular berry with many cells, each including one oblong, compreſſed, hard ſeed. The male flowers have a one-leaved empalement, cut into ſmall acute ſegments; the petal is thick and four-cornered, cut into four obtuſe ſegments which turn backward; they have eight ſhort ſtamina, terminated by long, acute, twin ſummits, but have no germen.

This genus of plants is ranged in the ſecond ſection of Linnæus's twenty-third claſs, intitled Polygamia Dicœcia. The plants of this claſs and ſection have hermaphrodite and female flowers growing on the ſame plant, and the male on ſeparate plants.

The SPECIES are,

1. DIOSPYROS (*Lotus*) foliorum paginis diſcoloribus. Lin. Sp. Plant. 1057. *Dioſpyros with the ſurface of the leaves of two colours.* Guaiacana. J. B. 2. 138. *The Indian Date Plumb.*
2. DIOSPYROS (*Virginiana*) foliorum paginis concoloribus. Lin. Sp. Plant. 1057. *Dioſpyros with the ſurface of the leaves of one colour.* Guaiacana Virginiana Piſhamin dicta. Boerh. Ind. alt. 2. *The Piſhamin or Perſimon, and by ſome Pitchumon Plumb.*

The firſt ſort is ſuppoſed to be a native of Africa, and was tranſplanted from thence into ſeveral parts of Italy, and alſo the ſouth of France. The fruit of this tree is by ſome ſuppoſed to be the Lotus, which Ulyſſes and his companions were inchanted with. This is a tree of a middling growth in the warm parts of Europe, where there are ſeveral of them which are upward of thirty feet high; but particularly in the botanic garden at Padua there is one very old tree, which has been deſcribed by ſome of the former botaniſts, under the title of Guaicum Patavinum. This tree produces plenty of fruit every year, from the ſeeds of which many plants have been raiſed. In England there are none of theſe trees, but what have been raiſed within a few years paſt, in the phyſic garden at Chelſea; for the ſeeds of which I was greatly obliged to my much honoured friend, his excellency the Chevalier Rathgeb, his imperial majeſty's miniſter at Venice, who has alſo ſupplied me with many other curious plants, trees, and fruits, from different parts of the world, where his extenſive correſpondence has been employed to collect whatever rare plants he could procure; and his generoſity in communicating what ſeeds and plants he can procure to the phyſic garden at Chelſea, requires this public acknowledgment.

The ſecond ſort is a native of America, but particularly in Virginia and Carolina there is great plenty of theſe trees growing in the woods. The ſeeds of this ſort are frequently brought to England, where the trees are now become pretty common in the nurſeries about London. This riſes to the height of fourteen or ſixteen feet, but generally divides into many irregular trunks near the ground, ſo that it is very rare to ſee a handſome tree of this ſort. This produces

plenty of fruit in England, but they never come to perfection here. In America the inhabitants preſerve the fruit until it be rotten (as is practiſed by Medlars in England) when they are eſteemed a pleaſant fruit. Theſe are both propagated by ſeeds, which will come up very well in the open ground; but if they are ſown upon a moderate hot-bed, the plants will come up much ſooner, and make a greater progreſs; but in this caſe the ſeeds ſhould be ſown in pots or boxes of earth, and plunged into the hot-bed, becauſe the plants will not bear tranſplanting till autumn, when the leaves fall off; ſo that when the plants are up, and have made ſome progreſs, they may be inured by degrees to the open air; and in June they may be wholly expoſed, and may remain abroad until November, when it will be proper to ſet the pots under a hot-bed frame to protect them from hard froſt, which, while they are very young, may kill the tops of the plants; but they muſt have as much free air as poſſible in mild weather. The following ſpring, before the plants begin to ſhoot, they ſhould be tranſplanted into a nurſery, in a warm ſituation, where they may be trained up for two years, and then removed to the places where they are deſigned to remain. Theſe are both hardy enough to reſiſt the greateſt cold of this country, after the plants have acquired ſtrength.

DIPSACUS. Lin. Gen. Plant. 107. Tourn. Inſt. R. H. 466. tab. 265. [διψακὸς, *Gr.* i. e. thirſty. It is ſaid to have taken its name by way of contrary, becauſe it receives the dew or rain in the hollow ſinus of its leaves that cohere together, by which it drives away the injuries of thirſt. It is alſo called Labrum Veneris, from the poſition of its leaves, which form a ſort of baſon, containing a liquor that beautifies the face.] The Teazel; in French, *Chardon à Bonnitier.*

The CHARACTERS are,

It hath many florets collected in one common perianthium, which is permanent; the florets have but one petal, which is tubular, cut into four parts at the top, which are erect. They have four hairy ſtamina which are as long as the petal, terminated by proſtrate ſummits; the germen is ſituated below the flower, ſupporting a ſlender ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes a column-ſhaped ſeed, incloſed in the common conical fruit, which is divided by long prickly partitions.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

The SPECIES are,

1. DIPSACUS (*Sylveſtris*) foliis ſeſſilibus ſerratis, ariſtis fructibus erectis. *Teazel with ſawed leaves ſet cloſe to the ſtalks, and erect beards to the fruit.* Dipſacus ſylveſtris. Dod. Pemp. 735. *Wild Teazel.*
2. DIPSACUS (*Fullonum*) foliis connatis, ariſtis fructibus recurvis. *Teazel with leaves joined at their baſe, and the beards of the fruit recurved.* Dipſacus ſativus. Dod. Pemp. 735. *Cultivated Teazel.*
3. DIPSACUS (*Laciniatus*) foliis connatis ſinuatis. Lin. Sp. Plant. 97. *Teazel with ſinuated leaves joined at their baſe.* Dipſacus folio laciniato. C. B. P. 385. *Teazel with a laciniated leaf.*
4. DIPSACUS (*Piloſus*) foliis petiolatis appendiculatis. Hort. Upſal. 25. *Teazel with foot-ſtalks having appendices.* Dipſacus ſylveſtris, capitulo minore, ſeu. Virga. Paſtoris minor. C. B. P. 385. *Wild Teazel with a ſmaller head, or ſmaller Shepherd's Rod.*

The firſt of theſe plants is very common upon dry banks in moſt parts of England, and is ſeldom cultivated in gardens, unleſs for the ſake of variety.

The fourth ſort grows naturally in many places near London, and is rarely admitted into gardens.

The third ſort grows naturally in Alſace, and is kept in botanic gardens for the ſake of variety; this differs from the wild Teazel in having the leaves deeply cut and jagged.

But it is the ſecond ſort only which is cultivated for uſe, which is called Carduus Fullorum, or Fullonum, being of ſo ſingular uſe in raiſing the knap upon woollen cloth, for which purpoſe there are great quantities

quantities of this plant cultivated in the weſt country. This plant is propagated by ſowing the ſeeds in March, upon a ſoil that has been well ploughed: about one peck of this ſeed will ſow an acre; for the plants ſhould have room to grow, otherwiſe the heads will not be ſo large, nor in ſo great quantity. When the plants are come up, you muſt hoe them in the ſame manner as is practiſed for Turneps, cutting down all the weeds, and ſingling out the plants to about ſix or eight inches diſtance; and as the plants advance, and the weeds begin to grow again, you muſt hoe them a ſecond time, cutting out the plants to a wider diſtance, for they ſhould be, at laſt, left at leaſt a foot aſunder: and you ſhould be particularly careful to clear them from weeds, eſpecially the firſt ſummer; for when the plants have ſpread ſo as to cover the ſurface of the ground, the weeds will not ſo readily grow between them. The ſecond year after ſowing, the plants will ſhoot up ſtalks with heads, which will be fit to cut about the beginning of Auguſt; at which time they ſhould be cut, and tied up in bunches, ſetting them in the ſun if the weather be fair; but if not, they muſt be ſet in rooms to dry. The common produce is about an hundred and ſixty bundles or ſtaves upon an acre, which they ſell for about one ſhilling a ſtave. Some people ſow Caraway and other ſeeds among their Teazels, but this is not a good method, for the one ſpoils the other; nor can you ſo eaſily clear them from weeds, as when alone. Dr. Linnæus ſuppoſes this to be only a ſeminal variety of the common wild Teazel; but I have cultivated both the ſorts more than forty years, and have never found either of them alter, ſo that there can be no doubt of their being diſtinct ſpecies.

DIRCA, Leather Wood.

The CHARACTERS are,

There is no empalement to the flower, which is club-ſhaped, of one petal, having a ſhort-bellied tube, and an unequal border; it hath eight ſlender ſtamina ſituated in the middle of the tube, terminated by erect roundiſh ſummits, with an oval germen, ſupporting a ſlender ſtyle which is longer than the ſtamina, crowned by a ſimple ſtigma. The germen afterward becomes a berry with one cell, incloſing one ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's eighth claſs, intitled Octandria Monogynia, the flower having eight ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

DIRCA (*Paluſtris*). Amœn. Acad. 3. p. 12. *Marſh Leatherwood.* Thymelæa floribus albis primo vere erumpentibus, foliis oblongis acuminatis, viminibus & cortice valde tenacibus. Flor. Virg. 155.

This ſhrub grows naturally in ſwamps in Virginia, Canada, and other parts of North America, where it ſeldom riſes more than five or ſix feet high, but in Europe it rarely is more than half ſo high; it ſends out many articulated branches near the root, garniſhed with oval leaves, of a pale yellowiſh colour, and ſmooth; the flowers come out from the ſide of the branches, two or three upon each foot-ſtalk; they are of a greeniſh white colour, and appear early in the ſpring, juſt at the time when the leaves begin to ſhoot; the flowers are ſeldom ſucceeded by ſeeds in England. This ſhrub is very difficult to propagate in Europe; for as it does not produce ſeeds here, it can only be increaſed by layers or cuttings, and theſe are generally two years before they put out roots; for as the ſhrubs grow naturally in very moiſt places, they are with difficulty preſerved in gardens, unleſs they are planted in wet ground, but they are ſeldom injured by cold.

DITTANY, the white. See DICTAMNUS.

DITTANY of Crete. See ORIGANUM.

DOCK. See LAPATHUM.

DODARTIA. Lin. Gen. Plant. 698. Tourn. Cor. 47. tab. 478. [This plant was ſo named by Dr. Tournefort, from Monſieur Dodart, a member of the Academy of Sciences at Paris.] We have no Engliſh name for this plant.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is bell-ſhaped, cut into five parts at top; the flower hath one petal, is ringent, having a cylindrical diflexed tube much longer than the empalement; the upper lip riſes and is indented, the lower lip ſpreads open and is trifid, the middle ſegment being narrow. It hath four ſtamina which incline to the upper lip, two of which are ſhorter than the other, and are terminated by ſmall roundiſh ſummits. In the center is ſituated a round germen, ſupporting an awl-ſhaped ſtyle, crowned by a bifid obtuſe ſtigma. The germen afterward becomes a globular capſule with two cells, filled with ſmall ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhort ſtamina, and the ſeeds being included in a capſule.

The SPECIES are,

1. DODARTIA (*Orientalis*) foliis linearibus integerrimis glabris. Lin. Sp. Plant. 633. *Dodartia with very narrow, ſmooth, entire leaves.* Dodartia Orientalis, flore purpuraſcente. Tourn. Cor. 47. *Eaſtern Dodartia with a purpliſh flower.*

2. DODARTIA (*Linaria*) foliis radicalibus oblongo-ovatis, ſerratis, caulinis linearibus integerrimis floribus ſpicatis terminalibus. *Dodartia with oblong, oval, ſawed leaves at the bottom, thoſe on the ſtalks narrow and entire, and flowers growing in ſpikes at the end of the ſtalks.* Linaria bellidis folio. C. B. P. 212. *Toad Flax with a Daiſy leaf.*

The firſt ſort was diſcovered by Dr. Tournefort near mount Ararat in Armenia, from whence he ſent the ſeeds to the royal garden at Paris, where they ſucceeded, and from thence moſt of the curious gardens in Europe have been ſupplied with this plant. This plant having characters which are different from all thoſe of Tournefort's Inſtitutions, he conſtituted this genus, and gave it the title from Monſieur Dodart, member of the Royal Academy of Sciences at Paris, and phyſician to her Royal Highneſs the Princeſs of Conti.

It hath a perennial root which creeps far under the ſurface, and ſends out new ſtalks at a great diſtance from the parent plant; theſe ſtalks are firm, a little compreſſed, and grow a foot and a half high, ſending out ſeveral ſide branches, garniſhed with long, fleſhy, narrow leaves placed oppoſite, of a deep green colour; thoſe on the lower part of the ſtalk are ſhorter and broader than thoſe above, but thoſe on the upper part of the ſtalk are entire; and at theſe joints the flowers come out ſingly on each ſide the ſtalk, ſitting cloſe to it; theſe are near an inch long; the bottom is tubulous, but divides into two lips above; the upper lip is hollow like a ſpoon, the convex ſide ſtanding upward, and is divided into two parts; the lower lip is divided into three parts, the middle being the narroweſt. The flower is of a deep purple colour, and appears in July, and is rarely ſucceeded by ſeeds in England. It propagates very faſt by its creeping roots, ſo that when it is once eſtabliſhed in a garden, it will multiply faſt enough; it loves a light dry ſoil, and may be tranſplanted either in autumn when the ſtalks decay, or in the ſpring before the new ſtalks ariſe.

The ſecond ſort is a biennial, or at moſt a triennial plant, which frequently periſhes ſoon after the ſeeds are ripe. This ſends out from the root ſeveral oblong leaves, which are near four inches long, narrow at their baſe, but increaſe in width upward, where they are about an inch broad, rounded at the end, and deeply ſawed on the edges; between theſe ariſe the ſtalks, which grow a foot high, their lower parts being garniſhed with leaves of the ſame form as the lower leaves, but much ſmaller; the upper leaves are very narrow and entire. The flowers grow in ſpikes on the top of the ſtalks; they are very ſmall and white, but are ſhaped like thoſe of the former ſort. This is propagated by ſeeds, which ſhould be ſown in autumn ſoon after they are ripe, upon a border of light earth, where they are deſigned to remain. When the plants appear the following ſpring, they muſt be thinned, and kept clear from weeds, which is all the

culture they require: the ſecond year they will flower and ſeed, after which the plants uſually decay; when the ſeeds are ſown in the ſpring, the plants never come up the ſame year.

DODECATHEON. See MEADIA.

DOG's TOOTH. See ERYTHRONIUM.

DOG-WOOD. See CORNUS.

DOLICHOS, Kidney Bean.

The CHARACTERS are,

The empalement is of one leaf, ſhort, and cut into four equal ſegments. The flower is of the butterfly kind, having a large round vexillum which is reflexed. The wings are oval, obtuſe, and the length of the keel. The keel is moon-ſhaped, compreſſed, and the top aſcends; it hath nine ſtamina joined below, and a ſingle one ſtanding ſeparate, terminated by ſingle ſummits, with a linear compreſſed germen, ſupporting an aſcending ſtyle, crowned by a bearded ſtigma. The germen afterward becomes a large oblong pod with two valves, containing compreſſed elliptical ſeeds.

This genus is diſtinguiſhed from Phaſeolus, by the keel of the flower not being ſpiral.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, the flower having ten ſtamina in two bodies.

The SPECIES are,

1. DOLICHOS (*Lablab*) volubilis, leguminibus ovato-acinaciformibus, ſeminibus ovatis hilo arcuato verſus alteram extremitatem. Prod. Leyd. 368. *Dolichos with a winding ſtalk, oval bill-ſhaped pods, and oval ſeeds.* Phaſeolus Ægyptiacus nigro ſemine. C. B. P. 341.
2. DOLICHOS (*Uncinatus*) volubilis, pedunculis multifloris leguminibus cylindricis hirſutis apice unguiculo ſubulato hamato, caule hirto. Lin. Sp. 1019. *Dolichos with a winding ſtalk, many flowers on each foot-ſtalk, cylindrical hairy pods, whoſe points are crooked and awl-ſhaped.*
3. DOLICHOS (*Pruriens*) volubilis, leguminibus racemoſis hirtis, valvulis ſubcarinatis, pedunculis ternis. Jacq. Amer. 27. *Dolichos with a winding ſtalk, hairy pods growing in a racemus, almoſt boat-ſhaped valves, and each foot-ſtalk having three pods.*
4. DOLICHOS (*Urens*) volubilis, leguminibus racemoſis hirtis tranſverſim lamellatis, ſeminibus hilo cinctis. Jacq. Amer. 27. *Dolichos with a winding ſtalk, hairy pods in a racemus, whoſe hairs are ſituated in tranſverſe lamellæ, commonly called Cow-itch.*

There are many other ſpecies of this genus, as there are alſo of Phaſeolus; but as there are few of them cultivated in the Engliſh gardens, it would ſwell this work to a great bulk, if they were all inſerted which have come to our knowledge, as the author has cultivated more than ſixty ſpecies, beſide many varieties.

The two firſt ſorts here mentioned, are cultivated in warm countries for the table, but in England theſe ſeldom perfect their ſeeds; and were they to thrive here as well as in the warm countries, they would be little eſteemed, becauſe we have much better ſorts in our gardens already; for the ſcarlet flowering Kidney Bean is preferable to all the other ſorts for eating, ſo deſerves our care to cultivate it more than any other.

The third and fourth ſorts are ſometimes preſerved in botanic gardens, but eſpecially the fourth, whoſe pods are cloſely covered with ſtinging hairs, commonly known by the title of Cow-itch; but theſe are too tender to thrive in the open air in this country, ſo that whoever is deſirous to have the plants, ſhould ſow their ſeeds in a hot-bed in March; and when the plants are come up, they ſhould be each planted in a ſeparate pot, and plunged into the hot-bed again, being careful to ſhade them till they have taken root; after which they muſt have freſh air every day admitted to them, in proportion to the warmth of the ſeaſon; and when the plants are too tall to remain in the hot-bed, they ſhould be removed into the bark-ſtove, where, if they are allowed room to run, they will flower and perfect their ſeeds.

DORIA. See SOLIDAGO and OTHONNA.

DORONICUM. Lin. Gen. Plant. 862. Tourn. Inſt. R. H. 487. tab. 477. Leopard's Bane.

The CHARACTERS are,

It hath a flower compoſed of ſeveral hermaphrodite florets, which are ſituated in the center, and form the diſk, and of female florets which compoſe the rays; theſe are included in one common empalement, which hath a double ſeries of leaves as long as the rays. The hermaphrodite florets are funnel-ſhaped, and cut into five parts at the top; theſe have five ſhort hairy ſtamina, terminated by cylindrical ſummits. In the bottom is ſituated the germen, ſupporting a ſlender ſtyle, crowned by an indented ſtigma; the germen afterward becomes a ſingle, oval, compreſſed ſeed, crowned with hairy down. The female florets are formed like a tongue, which are ſpread out and compoſe the border; theſe have a germen, ſupporting a ſtyle, crowned by two reflexed ſtigmas, but have no ſtamina; the germen becomes a ſingle furrowed ſeed, covered with a hairy down.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, intitled Syngeneſia Polygamia ſuperflua. The plants of this ſection have female and hermaphrodite flowers, which are both fruitful.

The SPECIES are,

1. DORONICUM (*Pardalianches*) foliis cordatis obtuſis, denticulatis radicalibus petiolatis, caulinis amplexicaulibus. Lin. Mat. Med. 394. *Leopard's Bane with obtuſe, heart-ſhaped, indented leaves, thoſe from the root having foot-ſtalks, and thoſe above embracing the ſtalks.* Doronicum maximum, foliis caulem amplexiantibus. C. B. P. 184. *Greateſt Leopard's Bane with leaves embracing the ſtalks.*
2. DORONICUM (*Plantagineum*) foliis ovatis acutis, ſubdentatis, ramis alternis. Hort. Cliff. 411. *Leopard's Bane with oval-pointed leaves indented at bottom, and alternate branches.* Doronicum plantaginis folio. C. B. P. 184. *Leopard's Bane with a Plantain leaf.*
3. DORONICUM (*Helveticum*) foliis lanceolatis, denticulatis, ſubtus tomentoſis, caule unifloro. Prod. Leyd. 160. *Leopard's Bane with ſpear-ſhaped indented leaves, woolly on their under ſide, and one flower on a ſtalk.* Doronicum Helveticum incanum. C. B. P. 185. *Hoary Helvetian Leopard's Bane.*
4. DORONICUM (*Bellidiaſtrum*) caule nudo ſimpliciſſimo unifloro. Hort. Cliff. 500. *Leopard's Bane with a naked ſingle ſtalk having one flower.* Bellis ſylveſtris media caule carens. C. B. P. 261. *Middle wild Daiſy having a tall ſtalk.*

The firſt ſort grows naturally in Hungary, and upon the Helvetian mountains, but is frequently preſerved in the Engliſh gardens. It hath thick fleſhy roots, which are divided into many knots or knees, ſending out ſtrong fleſhy fibres, which penetrate deep into the ground; and from theſe ariſe in the ſpring a cluſter of heart-ſhaped leaves, which are hairy, and ſtand upon foot-ſtalks; between theſe ariſe the flower-ſtalks, which are channelled and hairy, growing near three feet high, putting out one or two ſmaller ſtalks from the ſide, which grow erect, and are garniſhed with one or two heart-ſhaped leaves, cloſely embracing the ſtalks with their baſe; each ſtalk is terminated by one large yellow flower, compoſed of about twenty-four rays or female florets, which are about an inch long, plain, and indented in three parts at the top. In the center is ſituated a great number of hermaphrodite florets, which compoſe the diſk; theſe are tubulous, and ſlightly cut at the top into five parts. The flowers appear in May, and are ſucceeded by ſeeds which ripen in July; theſe are crowned by a hairy down, which ſerves to convey them to a diſtance.

This plant multiplies very faſt by its ſpreading roots, and if the ſeeds are permitted to ſcatter, they will produce plants wherever they happen to fall, ſo that it becomes a weed where it is once eſtabliſhed; it loves a moiſt ſoil and a ſhady ſituation.

The ſecond ſort hath oval leaves, ending in acute points; theſe are indented on their edges toward their baſe, but their upper parts are entire; the ſtalks riſe about two feet high; each is terminated by a large yellow

yellow flower, like thoſe of the former ſort; the ſtalks of this ſort have two or three leaves, which are placed alternately, and their baſe ſits cloſe to the ſtalks; theſe are not ſo hairy as thoſe of the former ſort; it flowers about the ſame time with that, and the ſeeds ripen well in England. This grows naturally in Portugal, Spain, and Italy, but is equally hardy with the firſt, and multiplies in as great plenty; the root is perennial.

The third ſort hath longer leaves than either of the former, which are covered with a hoary down on their under ſide, and are indented on their edges; the ſtalks are ſingle, and have ſeldom more than one leaf upon each; theſe grow a foot and a half high, and are terminated by a ſingle flower on the top, like thoſe of the former ſorts. This grows naturally on the Pyrenees and Helvetian mountains. It delights in a moiſt ſoil and a ſhady ſituation, and propagates in plenty, either from ſeeds or by parting the roots: it flowers and ſeeds about the ſame time with the former.

The fourth ſort grows naturally on the Alps and Pyrenean mountains; this hath a perennial root; the leaves are like of the leſſer Daiſy, but longer, and not ſo broad. The flower grows upon a naked foot-ſtalk, which is near a foot long; the roots ſeldom ſend out more than one ſtalk; the rays of the flower are white, and very like thoſe of the common Daiſy; the diſk of the flower is yellow, which is compoſed of hermaphrodite flowers.

This plant is preſerved in botanic gardens for the ſake of variety, but the flowers make little better appearance than thoſe of the common Field Daiſy, only they ſtand upon much taller foot-ſtalks. It muſt have a ſhady ſituation and a moiſt ſoil, otherwiſe it will not thrive in this country; it is propagated by parting of the roots, for the ſeeds do not ripen well in England. I received this from Verona, near which place it grows naturally.

The roots of the firſt ſort have been ſometimes uſed in medicine, ſome having commended it as an expeller of the poiſon of ſcorpions; but others reckon it to be a poiſon, and affirm that it will deſtroy wolves and dogs.

The other ſorts which have been formerly ranged under this genus, are now ſeparated, and may be found under the title ARNICA.

DORSIFEROUS plants [of dorſum, the back, and fero, *Lat.* to bear,] ſuch plants as are of the capillary kind, without ſtalk, and that bear their ſeeds on the backſide of their leaves.

DORSTENIA. Plum. Nov. Gen. 29. tab. 8. Lin. Gen. Plant. 147. [This plant was ſo named by father Plumier, from Dr. Dorſten, a German phyſician, who publiſhed a hiſtory of plants in folio.] Contrayerva.

The CHARACTERS are,

It hath one common plain involucrum ſituated vertically, upon which ſit many ſmall florets as in a diſk; theſe have no petals, but have four ſhort ſlender ſtamina, terminated by roundiſh ſummits. In the center is ſituated a roundiſh germen, ſupporting a ſingle ſtyle crowned by an obtuſe ſtigma; the germen afterward becomes a ſingle ſeed, incloſed in the common fleſhy receptacle.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

The SPECIES are,

1. DORSTENIA (*Contrayerva*) acaulis, foliis pinnatifido-palmatis, ſerratis, floribus quadrangulis. Lin. Sp. 176. *Dwarf Dorſtenia with many pointed, hand-ſhaped, ſawed leaves, and flowers placed on a quadrangular receptacle.* Dorſtenia ſphondylii folio, dentariæ radice. Plum. Nov. Gen. 29. *Dorſtenia with a Cow Parſnep leaf, and a Toothwort root.*
2. DORSTENIA (*Houſtoni*) acaulis, foliis cordatis angulatis acuminatis, floribus quadrangulis. Lin. Sp. 176. *Dwarf Dorſtenia with angular, heart-ſhaped, pointed leaves, and quadrangular receptacles to the flowers.* Dorſtenia dentariæ radice, folio minùs laciniato, placentâ quadrangulari & undulatâ. Houſt. MSS. *Contrayerva with a Toothwort root, a leaf leſs cut, and a quadrangular waved placenta.*
3. DORSTENIA (*Drakena*) acaulis, foliis pinnatifido-palmatis integerrimis, floribus ovalibus. Lin. Sp. 176. *Dwarf Dorſtenia with many pointed, hand-ſhaped, entire leaves, and an oval receptacle to the flowers; handed leaves, whoſe angles are very acute, and an oblong four-cornered placenta.*

The firſt of theſe plants was diſcovered by my late ingenious friend Dr. William Houſtoun, near Old Vera Cruz in New Spain. The ſecond was found by the ſame gentleman, on the rocky grounds about Campeachy. The third ſort was found in great plenty in the iſland of Tobago, by Mr. Robert Millar, ſurgeon. But the roots of all theſe ſpecies are indifferently brought over, and uſed in medicine, and for dyeing.

The firſt ſort ſends out ſeveral leaves from the root, which are about four inches long, and as much in breadth; theſe are deeply laciniated into five or ſeven obtuſe parts, ſtanding upon foot-ſtalks near four inches long; they are ſmooth, and of a deep green. The ſtalk which ſupports the placenta ariſes from the root, and grows near four inches high, upon which the fleſhy placenta is vertically placed; this is of an oval form about one inch long, and three quarters broad. Upon the upper ſurface of this, the ſmall flowers are cloſely ſituated, the fleſhy part becoming an involucrum to them; theſe are very ſmall, and ſcarce conſpicuous at a diſtance, being of an herbaceous colour.

The ſecond ſort ſends out ſeveral angular heart-ſhaped leaves from the root, which have foot-ſtalks eight or nine inches in length and very ſlender; the leaves are about three inches and a half long, and almoſt four broad at their baſe, the two ears having two or three angles which are acute, and the middle of the leaves are extended and end in acute points like a halbert; theſe are ſmooth and of a lucid green; the foot-ſtalk which ſuſtains the placenta is nine inches long, and about half an inch ſquare, and the upper ſurface cloſely ſet with ſmall flowers like the firſt.

The third ſort ſends out leaves of different forms; ſome of the lower leaves are heart-ſhaped, having a few indentures on their edges, and ending in acute points, but the larger leaves are deeply cut like the fingers on a hand, into ſix or ſeven acute ſegments. Theſe leaves are five inches long, and ſix broad in the middle; they are of a deep green, and ſtand upon long foot-ſtalks. The placenta is very thick and fleſhy, an inch and a half long, and three quarters broad, having four acute corners; theſe have a number of ſmall flowers, placed on their upper ſurface like the other ſpecies.

Theſe plants are at preſent very rare in Europe, nor was it known what the plant was, whoſe roots were imported, and had been long uſed in medicine in England, until the late Dr. Houſtoun informed us: for although father Plumier had diſcovered one ſpecies of this plant, and given the name of Dorſtenia to the genus, yet he ſeems not to have known, that the Contrayerva was the root of that plant.

It will be difficult to obtain theſe plants, becauſe the ſeeds are ſeldom to be found good; nor will they grow, if they are kept long out of the ground; ſo that the only ſure method to obtain them is, to have the roots taken up at the time when their leaves begin to decay, and planted pretty cloſe in boxes of earth, which may be brought very ſafe to England, provided they are preſerved from ſalt water, and are not over-watered with freſh water in their paſſage. When the plants arrive, they ſhould be tranſplanted each into a ſeparate pot filled with freſh earth, and plunged into the bark-ſtove, which ſhould be kept of a moderate heat; and the plants muſt be frequently refreſhed with water during the ſummer ſeaſon; but in winter, when the leaves are decayed, it ſhould be given to them more ſparingly. With this management theſe plants may not only be maintained, but

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may alſo be increaſed by parting their roots in the ſpring, before the plants put out their leaves.

DORYCNIUM. See LOTUS.

DOUGLASSIA. See VOLKAMERIA.

DRABA. Dillen. Gen. Lin. Gen. Plant. 714. Alyſſon. Tourn. Inſt. R. H. 216. tab. 104.

The CHARACTERS are,

The flower hath a four-leaved empalement, which falls off. It hath four petals placed in form of a croſs. It hath ſix ſtamina, four of which are as long as the empalement, the other two are much ſhorter and incurved; theſe are terminated by roundiſh ſummits. In the center is ſituated a bifid germen, ſupporting a permanent ſtyle, crowned by an oblong ſtigma. The germen afterward becomes a very ſhort capſule with two cells, ſeparated by the ſwelling ſtyle, which is oblique, and longer than the capſule. The valves are parallel to the middle, and divide the lower part of the cell from the upper, which is open, round, concave, and opens oblique, each cell containing a ſingle ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fifteenth claſs, intitled Tetradynamia Siliculoſa, the flower having four long and two ſhort ſtamina, and the ſeeds growing in ſhort capſules or pods.

The SPECIES are,

1. DRABA (*Alpina*) ſcapo nudo ſimplici, foliis lanceolatis integerrimis. Fl. Lapp. 255. *Draba with a ſingle naked ſtalk, and very entire ſpear-ſhaped leaves.* Alyſſon Alpinum, hirſutum luteum. Tourn. Inſt. 217. *Yellow hairy Alpine Madwort.*
2. DRABA (*Verna*) ſcapis nudis, foliis lanceolatis ſub inciſis. Hort. Cliff. 333. *Draba with naked ſtalks and cut leaves.* Alyſſon vulgare, polygoni folio, caule nudo. Tourn. Inſt. 217. *Common Madwort with a Knot-graſs leaf and naked ſtalk.*
3. DRABA (*Pyrenaica*) ſcapo nudo, foliis cuneiformibus trilobis. Lœfl. Lin. Sp. Plant. 642. *Draba with a naked ſtalk, and wedge-ſhaped leaves with three lobes.* This is the Alyſſon Pyrenaicum, perenne, minium, foliis trifidis. Tourn. Inſt. 217. *Leaſt perennial Madwort of the Pyrenees with trifid leaves.*
4. DRABA (*Muralis*) caule ramoſo, foliis cordatis dentatis amplexicaulibus. Prod. Leyd. 33. *Draba with a branching ſtalk, and heart-ſhaped indented leaves embracing the ſtalks.* Alyſſon veronicæ folio. Tourn. Inſt. 217. *Madwort with a Speedwell leaf.*
5. DRABA (*Polygonifolia*) caule ramoſo, foliis ovatis ſeſſilibus dentatis. Lin. Sp. Plant. 643. *Draba with a branching ſtalk, and oval indented leaves growing cloſe to the branches.* Alyſſon Alpinum, polygoni folio incano. Tourn. Inſt. R. H. 217. *Alpine Madwort with a hoary Knot-graſs leaf.*
6. DRABA (*Incana*) foliis caulinis numeroſis incanis, ſiliculis oblongis. Flor. Suec. 526. *Draba with many hoary leaves on the ſtalks, and oblique pods.* Lunaria ſiliqua oblongâ intortâ. Tourn. Inſt. 219. *Moonwort with an oblong intorted pod.*

The firſt ſort grows naturally on the Alps, and other mountainous parts of Europe; this is a very low plant, which divides into ſmall heads like ſome ſorts of Houſeleek, and from thence it was titled Sedum Alpinum &c. or Alpine Houſeleek. The leaves are ſhort, narrow, and very hairy; from each of theſe heads come out a naked flower-ſtalk an inch and a half high, terminated by looſe ſpikes of yellow flowers, having four obtuſe petals placed in form of a croſs; when they fade they are ſucceeded by triangular or heart-ſhaped pods, which are compreſſed, and incloſe three or four roundiſh ſeeds. It flowers in March, and the ſeeds ripen the beginning of June.

This plant is eaſily propagated by parting of the heads; the beſt time for doing of this is in autumn, becauſe it ſhoots up to flower very early in the ſpring. It ſhould have a moiſt ſoil and a ſhady ſituation, where it will thrive and flower annually. It requires no other culture but to keep it clean from weeds.

The ſecond ſort is an annual plant, which grows naturally upon walls and dry banks in many parts of England, ſo is never cultivated in gardens. This flowers in April, and the ſeeds ripen in May.

The third ſort grows naturally on the Alps, and other mountainous parts of Europe. This is a low perennial plant, which ſeldom riſes more than two inches high; it has a ſhrubby ſtalk, which divides into many ſmall heads like the firſt ſort. The leaves are ſmall, ſome of them are winged, having five ſhort narrow lobes, placed on a midrib, others have but three. The flowers come out in cluſters, ſitting cloſe to the leaves. They are of a bright purple colour, and appear early in the ſpring. This is a perennial plant, which may be propagated by parting of the heads in the ſame manner as the firſt, and requires the ſame treatment.

The fourth ſort grows naturally in ſhady woods in many parts of Europe, and is but ſeldom kept in gardens, unleſs for the ſake of variety. It is an annual plant, riſing with an upright branching ſtalk about ten inches high, garniſhed with heart-ſhaped indented leaves, which embrace the ſtalks with their baſe. The ſtalks are terminated by looſe ſpikes of white flowers, which appear the beginning of May; in June the ſeeds ripen, and the plants ſoon after decay. If the ſeeds are permitted to ſcatter, the plants will come up without trouble. It muſt have a ſhady ſituation, and delights in a moiſt ſoil.

The fifth ſort is an annual plant, which grows in ſhady woods in the northern parts of Europe. This is like the former ſort, but the leaves are larger, rounder, and do not embrace the ſtalks; they are alſo hairy, and the flowers are yellow. If the ſeeds of this are permitted to ſcatter, the plants will maintain themſelves if they have a ſhady ſituation.

The ſixth ſort riſes with an upright ſtalk about a foot high, the lower part being very cloſely garniſhed by oblong hoary leaves, which are indented on their edges. The upper part of the ſtalks puts out two or three ſhort branches; theſe are almoſt naked of leaves, as is alſo the upper part of the ſtalk. The flowers come out looſely on the top of the ſtalk; they are compoſed of four ſmall white petals placed in form of a croſs, which are ſucceeded by oblong pods, which are twiſted, containing three or four roundiſh compreſſed ſeeds. It flowers in June, and the ſeeds ripen in July. This grows naturally in the north of England and in Wales.

This plant ſeldom continues more than two years, but if the ſeeds are ſown in autumn in a ſhady border, the plants will come up in the ſpring; or where the ſeeds are permitted to ſcatter, the plants will riſe without any trouble.

DRACO ARBOR. See PALMA.

DRACO HERBA. [i. e. Dragon's-wort.] Tarragon, vulgò. See ABROTANUM.

DRACOCEPHALUM. Lin. Gen. Plant. 648. Dracocephalon. Tourn. Inſt. R. H. 181. tab. 83. [of δράκων, a dragon, and κεφαλὴ, a head.] i. e. Dragon's-Head.

The CHARACTERS are,

The flower hath a ſhort permanent empalement of one leaf, which is tubulous. It hath one ringent petal, with a tube the length of the empalement, with large oblong inflated chaps. The upper lip is obtuſe and arched, the under lip is trifid; the two ſide ſegments are erect, the middle turns downward and is indented. It hath four ſtamina ſituated near the upper lip, two being ſhorter than the other, and are terminated by heart-ſhaped ſummits. It hath a four-parted germen, ſupporting a ſlender ſtyle, ſituated with the ſtamina, and crowned by a bifid reflexed ſtigma. The germen afterward becomes four oval oblong ſeeds, incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fourteenth claſs, intitled Didynamia Gymnoſpermia, the flower having two long and two ſhorter ſtamina, and the ſeeds are naked.

The SPECIES are,

1. DRACOCEPHALUM (*Virginianum*) floribus ſpicatis foliis lanceolatis ſerratis. Lin. Sp. 828. *American Dragon's-Head with ſingle leaves and ſpiked flowers.* Dracocephalon Americanum. Breyn. Prod. 1. 34. *American Dragon's-Head.*

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2. DRACOCEPHALUM (*Canarienſe*) floribus ſpicatis, foliis compoſitis. Lin. Hort. Cliff. 308. *Dragon's-Head with ſpiked flowers and compound leaves.* Moldavica Americana trifolia odore gravi. Tourn. Inſt. 184. *Three-leaved American Balm, having a ſtrong ſmell, commonly called Balm of Gilead.*
3. DRACOCEPHALUM (*Moldavica*) floribus verticillatis, bracteis lanceolatis ſerraturis capillaceis. Lin. Hort. Cliff. 308. *Dragon's-Head with flowers growing in whorls, and ſpear-ſhaped bractæ.* Moldavica betonicæ folio, flore cæruleo. Tourn. Inſt. R. H. 184. *Moldavian Balm with a Betony leaf and blue flower.*
4. DRACOCEPHALUM (*Ocymifolia*) floribus verticillatis, foliis floralibus orbiculatis. Lin. Hort. Cliff. 308. *Dragon's-Head with flowers growing in whorls, and the upper leaves round.* Moldavica orientalis minima ocymifolio, flore purpuraſcente. Tourn. Cor. 11. *Leſſer Eaſtern Moldavian Balm with a Willow leaf and a bluiſh flower.*
5. DRACOCEPHALUM (*Caneſcens*) floribus verticillatis, bracteis oblongis, ſerraturis ſpinoſis, foliis tomentoſis. Hort. Upſal. 166. *Dragon's-Head with flowers growing in whorls, and the little leaves under the flowers ſawed, ending in ſpines, and woolly leaves.* Moldavica orientalis betonicæ folio, flore magno violaceo. Tourn. Cor. 11. *Eaſtern Moldavian Balm with a Betony leaf, and a large blue flower.*
6. DRACOCEPHALUM (*Nutans*) floribus verticillatis, bracteis oblongis ovatis integerrimis, corollis majuſculis nutantibus. Hort. Upſal. 167. *Dragon's-Head with flowers growing in whorls, the ſmall leaves under the flowers are oblong, entire, and hanging flowers much larger than the empalement.* Moldavica betonicæ ſolio, floribus minoribus cæruleis pendulis. Amman. Ruth. 44. *Moldavian Balm with a Betony leaf, and ſmaller blue pendulous flowers.*
7. DRACOCEPHALUM (*Thymiflorum*) floribus verticillatis, bracteis oblongis integerrimis, corollis vix calyce majoribus. Hort. Upſal. 167. *Dragon's-Head with flowers growing in whorls, the ſmall leaves are oblong, entire, and the flowers equal with the empalement.* Moldavica betonicæ folio, floribus minimis pallidè cæruleis. Amman. Ruth. 46. *Moldavian Balm with a Betony leaf, and very ſmall blue flowers.*
8. DRACOCÉPHALUM (*Peltatum*) floribus verticillatis, bracteis orbiculatis ſerratociliatis. Hort. Upſal. 166. *Dragon's-Head with flowers growing in whorls, oval bracteæ and very narrow ſpear-ſhaped leaves.* Moldavica orientalis, ſalicis folio, flore parvo cæruleo. Tourn. Cor. 11. *Eaſtern Moldavian Balm with a Willow leaf, and a ſmall blue flower.*
9. DRACOCEPHALUM (*Grandiflorum*) floribus verticillatis foliis ovatis inciſo-crenatis, bracteis lanceolatis integerrimis. Lin. Sp. Plant. 595. *Dragon's-Head with flowers growing in whorls, oval leaves which are cut and crenated, and ſpear-ſhaped bracteæ which are entire.*

The firſt ſort is a native of North America, where it grows in the woods, and by the ſides of rivers. This riſes with an upright ſtalk, which is four-cornered, near three feet high, garniſhed with ſpear-ſhaped leaves about three inches long, and half an inch broad, ſitting cloſe to the ſtalk; they are ſawed on their edges, and are placed oppoſite at each joint, ſometimes there are three leaves ſtanding round at the ſame place. The flowers are purple and grow in ſpikes on the top of the ſtalks, ſo make a pretty variety among other hardy plants, eſpecially if the plants are ſtrong and vigorous. This is a perennial plant, which will live in the open air, but requires a moiſt ſoil, or ſhould be duly watered in dry weather, otherwiſe the leaves will ſhrink, and the flowers will make little appearance. This may be allowed a place in the ſhady borders of a garden, ſince it will not ramble, or take up much room. It flowers in July, and continues until the middle or end of Auguſt, and may be propagated by parting of the roots in autumn.

The ſecond ſort is a native of the Canary Iſlands, and hath been long an inhabitant in the gardens; it is uſually called by the gardeners Balm of Gilead, from the ſtrong reſinous ſcent which the leaves emit on being rubbed. This is a perennial plant, which riſes with ſeveral ſquare ſtalks to the height of three feet or more, becoming ligneous at their lower parts, and are garniſhed with compound leaves at each joint, which are placed oppoſite; theſe have three or five lobes, which are oblong, pointed, and ſawed on their edges. The flowers come out in ſhort thick ſpikes on the top of the ſtalks; they are of a pale blue colour, and are ſucceeded by ſeeds, which ripen very well in England. This plant continues producing flowers moſt part of ſummer; it is uſually kept in green-houſes; but in mild winters the plants will live abroad, if they are planted in warm borders; and thoſe plants which are kept in pots, will thrive much better when they are ſheltered under a frame, than if placed in a green-houſe, where the plants are apt to draw up weak, for they ſhould have as much free air as poſſible in mild weather, and only require to be ſheltered from ſevere froſt. This may be propagated by ſeeds, which, if ſown in autumn, will more certainly grow, than thoſe which are ſown in the ſpring; but if theſe are ſown in pots, they muſt be ſheltered under a frame in the winter, and if the plants do not come up the ſame autumn, they will ariſe in the ſpring; but if the ſeeds are ſown in the full ground, it ſhould be in a warm border; and in hard froſt they ſhould be ſheltered, otherwiſe the young plants will be deſtroyed. The plants may alſo be propagated by cuttings; which, if planted in a ſhady border any time in ſummer, will very ſoon take root, and furniſh plenty of rooted plants.

The third ſort is a native of Moldavia; this has been long preſerved in curious gardens. It is an annual plant, which riſes with branching ſtalks a foot and a half high, garniſhed with oblong leaves, which are placed oppoſite, and are deeply ſawed on their edges. The flowers come out in whorls round the ſtalks at every joint; theſe are blue, and appear in July, continuing to the middle of Auguſt, and the ſeeds ripen in September. The plants have a ſtrong balſamic odour, which is to ſome perſons very agreeable: the ſeeds ſhould be ſown in ſmall patches in the ſpring, upon the borders where they are to remain, and when the plants come up, they ſhould be thinned where they grow too near together, and kept clear from weeds, which is the only culture they require. Of this there is a variety with white flowers, which is pretty common in the gardens; this only differs from the other in the colour of the flowers, but yet theſe conſtantly retain their difference from ſeeds.

The fourth ſort was diſcovered by Dr. Tournefort in the Archipelago, who ſent the ſeeds to the royal garden at Paris, which have ſince been communicated to many curious gardens in Europe; this riſes with upright ſtalks about a foot high, which ſeldom put out branches; theſe are garniſhed with long narrow leaves, which are entire, placed oppoſite at each joint, where the flowers come out in whorls, almoſt the whole length of the ſtalks; theſe are of a pale blue, and appear about the ſame time as the former; this ſort has very ſmall flowers, which make no great appearance, therefore is ſeldom cultivated, except in botanic gardens for the ſake of variety.

The fifth ſort was diſcovered by Dr. Tournefort in the Levant; this hath hoary ſquare ſtalks, which riſe a foot and a half high, putting out two or three ſide branches, garniſhed with hoary leaves near two inches long, and half an inch broad, a little indented on their edges; they are placed oppoſite at the joints, juſt under the whorls of flowers, which ſit cloſe to the ſtalk; theſe are larger than thoſe of the other ſpecies, and are of a fine blue colour, which between the hoary leaves of the plant, make a pretty appearance. It flowers and ſeeds about the ſame time as the former ſorts; this is generally treated as an annual plant, like the former ſorts, but the roots of this will live two years if they are in a dry ſoil. There is a variety of this with white flowers, the ſeeds of which generally produce the ſame coloured flowers.

The ſixth ſort grows naturally in Siberia, from whence the ſeeds were ſent to the imperial garden at Peterſburgh, and the late Dr. Amman, who was profeſſor of botany, ſent me the ſeeds. This is an annual plant, from whoſe roots come out many ſquare weak ſtalks, which grow about nine inches long; theſe are at the bottom garniſhed with oval ſpear-ſhaped leaves about two inches long, and one inch and a quarter broad, ſtanding oppoſite upon pretty long foot-ſtalks, and are crenated on their edges. The upper part of the ſtalks have ſmaller leaves, which ſit cloſe at the joints, from whence come out the flowers in whorls; they are of a deep blue colour, and hang downward; theſe appear at the ſame time with the former, and the ſeeds ripen in autumn.

The ſeventh ſort grows alſo in Siberia, the ſeeds of this were ſent me with the former. It hath ſquare ſtalks, which riſe a foot and a half high; the lower leaves are very like thoſe of Betony, and ſtand upon very long foot-ſtalks. The upper leaves are ſmall, and ſit cloſer to the ſtalks. The flowers come out in whorls at every joint; theſe are very ſmall, and of a pale purple or blue colour, ſo make little appearance, but it is preſerved in ſome gardens for the ſake of variety.

The eighth ſort grows naturally in the Levant, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris. This is an annual plant, which riſes with a ſquare ſtalk about a foot high, ſending out two ſmall ſide branches from the lower part. The leaves are ſpear-ſhaped, and crenated on their edges; they are placed oppoſite, and ſtand on foot-ſtalks. The flowers are ſmall, of a purpliſh colour, and come out in whorls round the ſtalks, having two roundiſh ſmall leaves (called bracteæ) immediately under them, which are ſawed on their edges, each ſerrature ending with a long hair. This ſort flowers and ſeeds at the ſame time as the former.

All theſe ſorts are propagated by ſeeds, which may be ſown either in the ſpring or autumn, in the places where the plants are to remain, and will require no other treatment than the third ſort.

DRACONTIUM. Lin. Gen. Plant. 916. Dracunculus. Tourn. Inſt. R. H. 160. tab. 70. Dragon; in French, *Serpentaire*.

The CHARACTERS are,

It hath a ſingle cylindrical ſpadix (or ſtalk) on the upper part of which the parts of fructification are diſpoſed in a ſingular manner. The flowers have no empalement, but have five oval concave petals, which are equal; they have ſeven narrow depreſſed ſtamina the length of the petals, terminated by oblong, four-cornered, twin ſummits, which ſtand erect; they have an oval germen, ſupporting a taper ſtyle, crowned by a three-cornered ſtigma. The germen afterward becomes a roundiſh berry, incloſing ſeveral ſeeds; theſe are all incloſed in a large fleſhy ſpatha (or ſheath) opening with one valve.

This genus of plants is ranged in the ſeventh ſection of Linnæus's twentieth claſs, intitled Gynandria Polyandria. This claſs and ſection contains the plants which have male and female flowers joined in the ſame ſpike, and the male flowers have ſeveral ſtamina.

The SPECIES are,

1. DRACONTIUM (*Pertuſum*) foliis pertuſis, caule ſcandente. Lin. Sp. Plant. 968. *Dragon with leaves having holes, and a climbing ſtalk.* Arum hederaceum, amplis foliis perforatis. Plum. Amer. 40. tab. 56. *Climbing Arum with large perforated leaves.*
2. DRACONTIUM (*Polyphyllum*) ſcapo breviſſimo, petiolo radicato, lacero, foliolis tripartitis, laciniis pinnatifidis. Hort. Cliff. 434. *Dragon with a very ſhort ſtalk, the foot-ſtalk cut, and the ſmall leaves divided into three parts, which terminate in many points.* Arum polyphyllum, caule ſcabro punicante. Par. Bat. 93. *Many leaved Arum with a rough purple ſtalk.*
3. DRACONTIUM (*Spinoſum*) foliis ſagittatis, pedunculis petioliſque aculeatis. Flor. Zeyl. 328. *Dragon with arrow-pointed leaves, whoſe foot-ſtalks have ſpines.* Arum Zeylanicum ſpinoſum, ſagittæ foliis. Par. Bat. 75. *Prickly Arum of Ceylon with arrow-pointed leaves.*
4. DRACONTIUM (*Camtſchatcenſe*) foliis lanceolatis. Amœn. Acad. 2. p. 360. *Dragon with ſpear-ſhaped leaves.*

The firſt ſort grows naturally in moſt of the iſlands in the Weſt-Indies. This hath ſlender jointed ſtalks, which put out roots at every joint, that faſten to the trunks of trees, walls, or any ſupport which is near them, and thereby riſe to the height of twenty-five or thirty feet. The leaves are placed alternately, ſtanding upon long foot-ſtalks; they are four or five inches long, and two and a half broad, having ſeveral oblong holes in each, which on the firſt view appears as if eaten by inſects, but they are natural to the leaves. The flowers are produced at the top of the ſtalk, which always ſwells to a larger ſize in that part than in any other; theſe are covered with an oblong ſpatha (or hood) of a whitiſh green colour, which opens longitudinally on one ſide, and ſhews the piſtil, which is cloſely covered with flowers, of a pale yellow, inclining to white. When this plant begins to flower, it ſeldom advances farther in height, ſo that theſe ſeldom are more than ſeven or eight feet high; but the leaves are much larger on theſe, than thoſe of the plants which ramble much farther.

This plant is eaſily propagated by cuttings, which, if planted in pots filled with poor ſandy earth, and plunged into a hot-bed, will ſoon put out roots, if they had none before; but there are few of the joints which have not roots: the plants are tender, ſo will not live in the open air in England, therefore the pots ſhould be placed near the walls of the hot-houſe, againſt which the plants will climb, and faſten their roots into the wall, and thereby ſupport the ſtalks. They ſhould have but little water given them in the winter, but in warm weather it muſt be given them three or four times a week, and in the ſummer the free air ſhould be admitted to them in plenty. The plants have no particular ſeaſon of flowering, for they ſometimes flower in autumn, and at other times in the ſpring, but they do not ripen their ſeeds in England.

The ſecond ſort grows naturally in ſeveral of the iſlands of America. I received roots of this from Barbuda. This hath a large knobbed irregular root, covered with a rugged brown ſkin. The ſtalk riſes about a foot high, is naked to the top, where it is garniſhed with a tuft of leaves, which are divided into many parts. The ſtalk is ſmooth, of a purple colour, but is full of ſharp protuberances of different colours, which ſhine like the body of a ſerpent. The ſpadix (or ſtalk) of the flower riſes immediately from the root, and is ſeldom more than three inches high, having an oblong ſwelling hood at the top, which opens lengthways, ſhewing the ſhort, thick, pointed piſtil within, upon which the flowers are cloſely ranged.

This ſort is tender, ſo requires a warm ſtove to preſerve it in England. The roots muſt be planted in pots filled with light kitchen-garden earth, and plunged into the tan-bed in the ſtove, where they ſhould conſtantly remain; in the winter they muſt be watered very ſparingly, but in warm weather, when the plants are in vigour, they muſt be often refreſhed, but it ſhould not be given them in too great quantities; with this management the plants will flower, but their roots do not increaſe here.

The third ſort grows naturally in the iſland of Ceylon, and in ſeveral parts of India; this hath an oblong thick root, full of joints, from which ariſe ſeveral leaves, ſhaped like thoſe of the common Arum, but their foot-ſtalks are covered with rough protuberances. The ſtalk which ſupports the flower is ſhort, and ſet with the like protuberances; and at the top is a hood, or ſpatha, about four inches long, as thick as a man's finger, which opens longitudinally, and expoſes the piſtil, which is ſet with flowers. This is a tender plant, and requires the ſame treatment as the former ſort.

The fourth ſort hath roots like the common Arum, from which come out ſeveral ſpear-ſhaped leaves, ſtanding each upon a ſeparate foot-ſtalk, ariſing immediately

mediately from the root, as thoſe of the common Arum. This hath not yet flowered in England, ſo I can give no further account of it. This grows naturally in Siberia, ſo requires a ſhady ſituation, and will bear the greateſt cold of this country.

Theſe plants are preſerved in the gardens of the curious in England and Holland, more for the ſake of variety than for beauty; for except the firſt ſort, there is not any of them which make much appearance; that indeed may be ſuffered to have a place againſt the wall of the ſtove, over which it will ſpread, and cover the nakedneſs of the wall; and the leaves remaining all the year, which are ſo remarkably perforated, make a ſingular appearance.

All the other ſorts of Dragon are tender plants, ſo will not live in this country, unleſs they are preſerved in the warmeſt ſtoves; the ſeveral American ſorts grow naturally in the woods in Jamaica, and other hot parts of America; the climbing ſorts twiſt themſelves round the trunks of trees, into which they faſten their roots, which are ſent forth from their joints, and riſe to the height of thirty or forty feet. Theſe climbing ſorts are eaſily propagated by cuttings, which, being very ſucculent, may be brought over to England in a box of dry hay, if they are packed up ſeparate, ſo as not to injure each other by the moiſture, which is apt to flow out at the part where they are cut off, which may occaſion a fermentation, and thereby rot the cuttings. When the cuttings arrive, they ſhould be planted in ſmall pots filled with light freſh earth, and plunged into a hot-bed of tanners bark, being very careful not to let them have too much moiſture until they have taken root, leſt it rot them: when they have taken root, they muſt be frequently refreſhed with water; and when they are grown pretty large, they ſhould be placed in the bark-bed in the ſtove, where they muſt be placed near ſome ſtrong plants, to which they may faſten themſelves, otherwiſe they will not thrive; for though they will ſend forth roots at their joints, which will faſten to the mortar of the ſtove, when placed againſt the wall, yet they will not thrive near ſo well as againſt a ſtrong plant, which will afford them nouriſhment.

The other ſorts are propagated by offsets from their roots; theſe may be procured from the countries of their growth, and ſhould be planted in tubs of earth, about a month before they are put on board the ſhip to tranſport them; theſe tubs ſhould be placed in a ſhady ſituation until they have taken root. In their paſſage great care ſhould be had to keep them from ſalt water, as alſo not to let them have too much water given them; for if they have a little water once or twice a week at moſt, while they are in a hot climate, and when they are come into a cooler climate, once in a fortnight, this will be ſufficient for them; and it ſhould be done ſparingly, leſt it rot them; for if the tops of the plants ſhould decay for want of water in their paſſage, if the roots are not rotted, they will ſoon recover with proper care.

When the plants arrive, they ſhould be tranſplanted into pots filled with light freſh earth, and plunged into a hot-bed of tanners bark, and gently watered until they have taken good root, after which time they will require to be frequently refreſhed with water; but as their ſtems are very ſucculent, they muſt not have too much moiſture. Theſe plants ſhould be conſtantly kept in the ſtove, where, in hot weather, they ſhould have freſh air admitted to them; but in winter they muſt be kept very warm, otherwiſe they cannot be preſerved in this country.

Theſe plants will riſe to the height of three, four, or five feet, and will afford a very agreeable variety amongſt other tender exotic plants in the ſtove.

DRACUNCULUS PRATENSIS. See ACHILLEA.

DRAGON. See DRACONTIUM.

DROSERA. Ros Solis, or Sun-dew.

We have two or three ſpecies of this plant, which grow naturally upon bogs in many parts of England, and there are three or four other ſorts, which are natives of warmer countries; but as theſe cannot be cultivated in gardens, unleſs where there are bogs, it would be needleſs to deſcribe them.

The common round-leaved ſort is uſed in medicine, ſo is gathered by the herb-folks who ſupply the markets.

DRYAS, Cinquefoil Avens.

There are two ſpecies of this genus, which grow naturally in Scotland and Ireland, upon mountainous places, where the ſoil is wet; one of them hath five petals to the flower, and winged leaves, the other hath eight petals to the flower, and ſimple leaves; but as neither of the plants make much appearance, they are rarely preſerved except in ſome botanic gardens for variety.

DULCAMARA. See SOLANUM.

DUNGS are deſigned to repair the decays of exhauſted or worn-out lands, and to cure the defects of land, which are as various in their qualities as the dungs are, that are uſed to meliorate and reſtore them: ſome lands abound too much in coldneſs, moiſture, and heavineſs; others again are too light and dry, and ſo, to anſwer this, ſome dungs are hot and light, as that of ſheep, horſes, pigeons, &c. others again are fat and cooling, as that of oxen, cows, hogs, &c.

And as the remedies that are to be uſed muſt be contrary to the diſtempers they are to cure, ſo the dung of oxen, cows, and hogs, muſt be given to clean, dry, light earths, to make them fatter and cloſer, and hot and dry dungs to meliorate cold, moiſt, and heavy lands.

There are two peculiar properties in dungs, the one is to produce a certain ſenſible heat, capable of producing ſome conſiderable effect, which properties are ſeldom found but in the dung of horſes and mules, while it is newly made, and a little moiſt; the other property of dung is, to fatten the earth and render it more fruitful.

The dung of horſes and mules is of admirable uſe in gardens in the winter time, becauſe it then animates and enlivens all things; and, in ſome meaſure, ſupplies the office which is performed by the heat of the ſun in the ſummer time, affording us all the novelties of the ſpring, as Aſparagus, Cucumbers, Radiſhes, ſallads, &c. Horſe dung is the beſt improvement for cold jejune lands that we can procure in any quantity; but yet horſe dung being uſed alone, or when it is too new, is frequently prejudicial to ſome plants; and if it be ſpread thin over lands in the ſummer time, it is of very little ſervice, becauſe the ſun, drawing out all the virtue and goodneſs of it, renders it little better than thatch or dry ſtraw; and though too much of it can ſcarcely be uſed in a kitchen-garden for Cabbages, Cauliflowers, and all other plants that grow there, and require abundance of nouriſhment; yet may it be a fault to lay too much of it on corn-lands, becauſe it produces abundance of ſtraw.

In very cold moiſt land, I have frequently ſeen new horſe dung buried as it came from the ſtable, and always obſerved that the crops have ſucceeded better, than where the ground was dreſſed with very rotten dung.

Horſe dung being of a very hot nature, is beſt for cold lands, and cow dung for hot lands; and being mixed together, may make a very good manure for moſt ſorts of ſoil, and for ſome they may be mixed with mud.

Sheeps dung and deers dung differ not much in their quality, and are eſteemed by ſome the beſt of dungs for cold clays. Some recommend them to be beat into powder, and ſpread very thin over autumn or ſpring crops, about four or five loads to an acre, after the ſame manner as aſhes, malt duſt, &c. are ſtrewed.

This I have ſeen practiſed upon corn, and alſo upon graſs land, to great advantage for the firſt year; but theſe light dreſſings do not laſt long, therefore require to be often repeated.

In

In Flanders and other places, they houſe their ſheep at nights in places ſpread with clean ſand, laid about five or ſix inches thick, which, being laid on freſh every night, is cleared out once a week; this mixture of ſand and dung makes an excellent dreſſing for ſtrong land, for the dung and urine of the ſheep is a very rich manure, bears a conſiderable price, and is an excellent manure for all ſtiff cold land: and Mr. Quinteney is of opinion, that it is the greateſt promoter of fruitfulneſs in all ſorts of ground.

Others recommend hogs dung as the fatteſt and moſt beneficial of all ſorts of dungs; and ſay, that one load of it will go as far as two loads of other dung, and that it is the beſt of all dungs for fruit-trees, eſpecially for Pear and Apple-trees in a light ſoil, and a very rich dung for graſs. I have often uſed this dung to fruit-trees when it was well rotted, and have found it the moſt beneficial to them of any manure.

The dung of pigeons, hens, and geeſe, are great improvers of meadow or corn land, the firſt of theſe being the beſt ſuperficial improvement that can be laid on meadow or corn land: but before it is uſed, it ought to have lain abroad out of the dove-houſe ſome time, that the air may have a little ſweetened it, and mollified the fiery heat that is in thoſe dungs.

Eſpecially it is good for cold, wet, clayey lands; but it ought to be dried before it be ſtrewed, becauſe it is naturally apt to clod in wet; and it ſhould be mixed with earth or ſand to keep it from clinging together, that it may be ſtrewed thin, being naturally very hot and ſtrong.

Some recommend the dung of pigeons, and alſo of other fowls, as the beſt manure for Aſparagus, Strawberries, or any ſorts of flowers; but this ſhould be rotted and well mixed with the earth, before it is uſed to flowers.

Monſieur Gentil approves of pigeons dung, as being good for ſuch trees whoſe leaves are apt to turn yellow, if they grow in free ſoils that are rather cold than hot, provided the heat of it has been abated by lying two or three years in the dunghill; but this ſhould be applied in autumn, and in ſmall quantities.

This being ſpread about an inch thick at the foot of a tree, whoſe leaves are yellow, and being left there till March, he recommends as very uſeful in cold and moiſt ſoils.

The dung of poultry being hot and full of ſalts, tends much to facilitate vegetation, and is abundantly quicker in its operation than the dung of animals which feed on herbs.

Sir Hugh Plat ſays, one load of grain will enrich ground more than ten loads of common dung; which if it be true, it is rational to ſuppoſe, that if ſimple grain, by only infuſion in the mixture of compoſts, has a very good effect, it will be more powerful when it has paſſed through the bodies of animals.

Human dung is a great improver of all cold four lands, and eſpecially if it be mixed with other earths or dungs to give it a fermentation.

But there is not any ſort of manure equal to the cleanſing of London ſtreets, for all ſtubborn clayey ſoils; the parts of which will be better ſeparated, and in a much leſs time, with this manure, than with any other compoſt whatever; and where it can be obtained, is extremely well worth procuring, either for corn, graſs, or garden land.

DURANTIA. Lin. Gen. Plant. 704. Caſtorea. Plum. Nov. Gen. 30. tab. 17.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is erect, and cut into five acute ſegments at the top, and ſits upon the germen; the flower is of the ringent kind, with one petal, having a long tube, which opens at the top in two lips; the upper lip is oval, erect, and concave; the under is divided into four equal ſegments, which are round. It hath four ſhort ſtamina, ſituated in the bottom of the tube, the two middle being a little ſhorter than the other, terminated by proſtrate ſummits; the germen which is ſituated under the flower, ſupports a long ſlender ſtyle, crowned by a headed ſtigma. The germen afterward becomes a globular berry, terminated by three acut points, having one cell incloſing four angular ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, intitled Didynamia Angioſpermia, the flower having two long and two ſhorter ſtamina, and the ſeeds being included in a capſule.

The title which was firſt given by father Plumier to this genus, was Caſtorea, in memory of Caſtor Durant, a phyſician of Rome, who publiſhed a hiſtory of plants in Italian, which was printed at Rome in 1585. Dr. Linnæus has now altered the title of the genus, and inſtead of the chriſtian name, he has given it the ſurname of the ſame perſon.

The SPECIES are,

1. DURANTIA (*Plumeiri*) ſpinoſa. Lin. Sp. Plant. 637. *Prickly Durantia.* Caſtorea repens ſpinoſa. Plum. Nov. Gen. 30. *Creeping prickly Caſtorea.*
2. DURANTIA (*Racemoſa*) inermis. Lin. Sp. Plant. 637. *Durantia without thorns.* Caſtorea racemoſa flore cæruleo, fructu croceo. Plum. Nov. Gen. 30. *Branching Caſtorea with a blue flower and Saffron-coloured fruit.*
3. DURANTIA (*Erecta*) caule erecto ſpinoſo, foliis ovatis integerrimis, floribus racemoſis. *Durantia with an upright prickly ſtalk, oval entire leaves, and flowers growing in long bunches.* Jaſminum folio integro, obtuſo, flore cæruleo racemoſo, fructu flavo. Sloan. Cat. Jam. 169. *Jaſmine with entire obtuſe leaves, blue flowers growing in bunches, and a yellow fruit.*

The firſt ſort hath many trailing branches, which are armed with hooked thorns at every joint, and are garniſhed with oblong leaves, which are placed without order, and are ſlightly ſawed on their edges; the flowers come out from the ſide of the ſtalks in pretty long bunches, like thoſe of the common Currant; they are of a pale bluiſh colour, and ſucceeded by brown berries not unlike the fruit of the Hawthorn; theſe have one cell, and incloſe four angular ſeeds.

The ſecond ſort hath a branching woody ſtalk, which riſes ſeven or eight feet high; the branches are garniſhed with oval ſpear-ſhaped leaves three inches long, and one and a half broad in the middle; they are ſawed on their edges, of a lucid green colour, and ſtand oppoſite. The flowers are produced in long bunches at the end of the branches; theſe are blue, and ſucceeded by pretty large, round, yellow berries, which contain four angular ſeeds.

The third ſort riſes with a ſtrong woody ſtem to the height of ten or twelve feet, covered with a white bark, dividing into many branches, which are armed with ſharp thorns on their ſide; theſe are garniſhed with oval ſtiff leaves one inch long, and three quarters broad. The flowers come out in long bunches from the end of the branches, which are blue, and are ſucceeded by ſmall, round, yellow berries, which contain four angular ſeeds. I received this from the late Dr. Houſtoun, who found it growing in Jamaica.

The plants are natives of warm countries, ſo they require a ſtove to preſerve them in England; they are propagated by ſeeds, which ſhould be ſown in ſmall pots, and plunged into a hot-bed of tanners bark; and when the plants are fit to remove, they muſt be planted each into a ſeparate ſmall pot filled with light earth, and plunged into the hot-bed again, obſerving to ſhade them till they have taken new root, then they muſt be treated in the ſame manner as other plants from the ſame country.

The ſecond ſort may be propagated by cuttings, which may be planted in any of the ſummer months but theſe ſhould be plunged into a moderate hot-bed, and ſhaded from the ſun till they have taken root, then they may be treated in the ſame manner as the ſeedling plants. This ſort is not ſo tender as the other two, ſo may be placed in the open air in ſummer; and if they are kept in a moderate temperature of warmth in the winter, they will thrive better than in great heat. I kept ſome of the plants of this ſort three winters, in a dry warm glaſs-caſe without fires,

and they have ſucceeded pretty well; but the winter 1762 proving ſevere, cauſed their leaves to fall, but ſince they have put out again very well.

DWARF-TREES. Theſe were formerly in much greater requeſt than they are at preſent; for though they have many advantages to recommend them, yet the diſadvantages attending them greatly over-balance; and ſince the introducing of eſpaliers into the Engliſh gardens, Dwarf-trees have been in little eſteem for the following reaſons:

1ſt, The figure of a Dwarf-tree is very often ſo much ſtudied, that, in order to render the ſhape beautiful, little care is taken to procure fruit, which is the principal deſign in planting theſe trees.

2dly, The branches being ſpread horizontally near the ſurface of the ground, render it very difficult to dig or clean the ground under them.

3dly, Their taking up too much room in a garden (eſpecially when they are grown to a conſiderable ſize) ſo that nothing can be ſown or planted between them.

4thly, Theſe trees ſpreading their branches near the ground, continually ſhade the ſurface of the earth; ſo that neither the ſun nor air can paſs freely round their roots and ſtems, to diſſipate noxious vapours; whereby the circumambient air will be continually replete with crude rancid vapours, which, being drawn in by the fruit and leaves, will render its juices crude and unwholſome, as well as ill taſted.

It is alſo very difficult to get to the middle of theſe Dwarf-trees in the ſummer, when their leaves and fruit are on the branches, without beating off ſome of the fruit, and breaking the young ſhoots; whereas, the trees on an eſpalier can at all times be come at on each ſide, to tie up the new ſhoots, or to diſplace all vigorous ones, which, if left on, would rob the trees of their nouriſhment.

Add to this, the fruit-buds of all ſorts of Pears and Apples, and moſt ſorts of Plumbs and Cherries, are firſt produced at the end of the former year's ſhoot, which muſt be ſhortened in order to keep the Dwarfs to their proper figure, ſo that the fruit-buds are cut off, and a greater number of branches are obtained, than can be permitted to ſtand; ſo that all thoſe ſorts of fruit-trees, whoſe branches require to be trained at their full length, are very improper to train up as Dwarfs; and the Peaches and Nectarines which will bear amputation, are too tender to be trained ſo in this country.

Theſe evils being entirely remedied by training the trees to an eſpalier, hath juſtly gained them the preference; however, if any one has a mind to have Dwarf-trees, notwithſtanding what has been ſaid, I ſhall lay down a few rules for their management.

If you deſign to have Dwarf Pear-trees, you ſhould bud or graft them on Quince ſtocks; but as many ſorts of Pears will not thrive if they are immediately budded or grafted on Quince ſtocks, ſo ſome of thoſe ſorts which will take freely, ſhould be firſt budded on the Quince ſtocks; and when theſe have ſhot, the ſorts you intend to cultivate, ſhould be budded into

theſe; for free ſtocks are apt to make them ſhoot ſo vigorouſly, as not to be kept within bounds. Theſe grafts or buds ſhould be put in about four or ſix inches above the ſurface of the ground, that the heads of the trees may not be advanced too high; and when the bud or graft has put out four ſhoots, you ſhould ſtop the end of the ſhoots, to force out lateral branches.

Two years after budding, theſe trees will be fit to tranſplant where they are to remain; for though many people chuſe to plant trees of a greater age, yet they ſeldom ſucceed ſo well as young ones. The diſtance theſe trees ſhould be planted is twenty-five or thirty feet aſunder, for leſs will not do if the trees thrive well. The ground between them may be cultivated for kitchen-garden herbs while the trees are young, but you ſhould not ſow or plant too near their roots.

In order to train your trees regularly, you ſhould drive ſtakes into the ground round the tree, to which the branches ſhould be faſtened down with liſt in a horizontal poſition; for if they are ſuffered to grow perpendicularly while young, they cannot be afterwards reduced without great violence to any tolerable figure. The neceſſary directions to be afterwards followed are, not to ſuffer any branches to croſs each other; and always in ſhortening any ſhoots be ſure to leave the uppermoſt eye outwards, whereby the hollowneſs in the middle of the tree will be better preſerved; and be careful to rub off all perpendicular ſhoots in the middle of the trees, as ſoon as they are produced. The other neceſſary rules you will find under the article of PRUNING.

The ſorts of Pears which do beſt in Dwarfs, are all ſummer and autumn fruits; for winter Pears are not worth planting in Dwarfs, they ſeldom bearing well, nor are ever well taſted, and commonly are very ſtony, becauſe they are commonly grafted on Quince ſtocks.

Apples are alſo planted in Dwarfs, moſt of which are now budded or grafted on Paradiſe ſtocks; but as theſe are for the moſt part of a ſhort duration, they are not profitable, and are fit only for ſmall gardens as a matter of curioſity, producing fruit ſooner, and in greater plenty, than when they are upon Crab or Apple ſtocks.

The diſtance theſe trees ſhould be planted, if on Paradiſe ſtocks, ſhould be ſix or eight feet, and upon Dutch ſtocks eighteen or twenty; but if on Crab ſtokcs, twenty-five or thirty feet aſunder each way. The management of theſe being the ſame with Pears, I need not repeat it.

Some perſons alſo plant Apricots and Plumbs for Dwarfs, but theſe ſeldom ſucceed well, as being of a tender conſtitution; and thoſe which will produce fruit on Dwarfs, are much more likely to do ſo when trained on an eſpalier, where they can be much better managed; and therefore I judge it much the better method, as being more certain, and the trees will make a better appearance.

E.

EAR

EARTH is the principal matter whereof our globe conſiſts; the character of which, according to Dr. Boerhaave, is, that it is a foſſil body, neither diſſoluble by fire, water, nor air; that it is inſipid and tranſparent; more fuſible than ſtone; ſtill friable, and containing uſually a ſhare of fatneſs.

There is no ſuch thing as a ſtrictly ſimple earth. Mr. Boyle ſays, that it doth not appear, that nature, any more than art, affords an elementary earth; at leaſt, ſome which appear of the ſimpleſt ſorts are found, upon examination, to have qualities not aſcribed to pure earth.

Of ſuch earths ſome are ſimple and immutable, as chalk, pumice, and rotten ſtone; others compound and fatty; of which kind are all boles, red, white, and brown; fullers earth, and divers kinds of medicinal earths, as the Cretica, Hungarica, Lemnian earth, and others.

Which earth are all reſolvable into oil, a little acid ſalt, &c. and a calx, which is the baſis, or the earth properly ſo called.

Sand is by naturaliſts generally ranked as a ſpecies of earth, though not very properly; in that ſands, ſtrictly ſpeaking, are a ſort of cryſtals, or little tranſparent pebbles, and are calcinable; and, by the addition of a fixed alkaline ſalt, fuſible and convertible into glaſs.

The fat earth is rendered fertile by the means of ſand, and becomes fit to feed and nouriſh vegetables, &c. for pure earth is liable to coaleſce into a hard coherent maſs, as in clay; and earth thus embodied, and as it were glued together, would be very unfit for the nouriſhment of plants.

But if hard ſand, i. e. cryſtals, which are indiſſoluble in water, and ſtill retain the ſame figure, be intermixed with ſuch earth, they will keep the pores of the earth open, and the earth itſelf looſe and incompact, and by that means give room for the juices to move, aſcend, &c. and for plants to be nouriſhed thereby.

Thus a vegetable, being planted either in the ſand alone, or in the fat glebe and earth alone, receives no growth or increment, but is either ſtarved or ſuffocated; but mix the two, and the maſs becomes fertile.

In effect, by means of ſand the earth is rendered, in ſome meaſure, organical; pores and interſtices being hereby maintained or preſerved, ſomething analogous to veſſels is effected, by which the juices of the earth may be conveyed, prepared, digeſted, circulated, and at length excerned and thrown off in the roots of plants.

The earth is made up of two parts; the firſt the containing part, i. e. the body, bed, or couch: the ſecond the part contained, and thoſe are the nitrous or ſulphureous particles, or prolific ſalts. The firſt is a lifeleſs inanimate maſs, and is only the receptacle of the other; for the earth, conſidered ſimply, and abſtracted from the before-mentioned nitrous and prolific ſalts, is a lifeleſs, dead, and inanimate maſs; but by the co-operation of water, ſun, and air, is put into motion, and promotes the work of vegetation: but if it were ſtript of thoſe prolific ſalts and ſpirituous particles, would produce no manner of plant, herb, &c. that ſhould be planted or ſown in it.

Theſe nitrous particles, or prolific ſalts, are of various and different qualities; and according as the earth is more or leſs ſtored with all or ſome of them, it is more or leſs productive; and according as it abounds with ſome of them more than others, differing from one another in contexture, it conſtitutes the different ſpecies or kinds of ſoils adapted to the propagation of different plants, the pores of whoſe roots are formed to receive, and whoſe nature is to attract, thoſe ſalts that are congenial to them.

Some diſtinguiſh earths into three claſſes, ſand, loam, and clay, as thoſe upon one or other of which all others do in ſome reſpects depend.

Gravel, and all the open ſoils, till the loam is come at, are of the ſandy kind.

Thoſe binding earths from the loam downwards, till the ſtiffneſs of chalk may be come at, may be reckoned of the clay kind.

All theſe ſorts of earth have a little tendency to vegetation, and have their ſalts proper for it, but in a different proportion; as a peck of clay may probably have double the quantity of ſalts in it that a peck of loam has, and a peck of loam may have ſix times the quantity of ſalts that a peck of ſand has.

Loam. Some call the ſuperficial earth that we meet with in England by this name, without having regard to what proportion of ſand and clay it contains: others again call that earth loam, that inclines more to clay than ſand. Some by loam mean that ſort of earth that equally partakes of ſand and clay, being a medium between ſand and clay, which they call mother earth; but the true definition of loam is, that ſort of earth which is fat and ſlippery, not of ſo cloſe a texture as clay, nor too looſe and ſandy, but of a middle nature between them, and is eaſily diſſolved by froſt, and gentle or eaſy to be wrought. This is one of the beſt ſoils for moſt eſculent plants and roots.

This mother earth, they ſay, may be in colour either black or yellow, and of which of theſe colours ſoever it be, plants of moſt ſorts will grow in it.

Sand and clay likewiſe produce certain plants, which are natural to each of them, and conſequently will thrive better in them than in any other ſoil.

But ſand is apt to precipitate thoſe plants that are ſet in it, earlier than clay, and will cauſe them to germinate near a month ſooner than thoſe that grow in clay, and that for this reaſon, becauſe the ſalts which are in ſand, are liable to be put in motion by the leaſt approach of the warmth of the ſun; but as ſand is quick in the operation, the ſalts are ſoon exhaled and ſpent.

Clay. The pores of clay are more cloſely compacted together, and do not ſo eaſily give out thoſe ſalts that are contained in it; nor can the fibres of every tender plant make their way through it in queſt of their proper nutriment.

But if the parts of the clay be opened, by digging and breaking it into ſmall particles, and thoſe parts be kept open by a mixture of ſome ſharp ſand, or ſome other body of the like quality, the effects of its vigour will plainly appear.

Some diſtinguiſh the ſeveral temperaments of the earth either into a light, ſandy, or looſe contexture, or into thoſe of a ſtiff, clayey, or cloſe one, either of which

which have their reſpective good qualities; and all of them, when they are in their extremes, require art to render them uſeful and beneficial in the production and growth of plants.

A light, ſandy, or looſe earth, requires a proper ligature, and ſhould have a compoſt of a heavier nature; and thoſe that are heavy, clayey, and cloddy, ſhould have a compoſt of a more fiery ſprightly nature, that will inſinuate itſelf into the heavy, lumpy, indigeſted clods, which would otherwiſe very much obſtruct the buſineſs of vegetation.

A good earth ſhould be of a blackiſh colour, fat, pliant, or eaſy to be digged; it ſhould be neither cold nor light; it ought to have no ill ſmell or taſte, and it ſhould be of the ſame quality three or four feet deep for trees, which, if they have not that depth, will languiſh and decay after they have been planted ſix years. But this depth is not required for fruit-trees, which will thrive very well if they have two feet and a half of good earth, and generally produce the moſt generous fruits, when their roots ſpread near the ſurface of the earth.

In order to know whether the earth has any ill ſmell or taſte, they direct to lay a handful of it to ſoak in water for ſeven or eight hours, and afterwards to ſtrain it, and taſte and ſmell it, by which the taſte or ſmell will eaſily be perceived.

EARWIGS.

Theſe are very troubleſome vermin in a garden, eſpecially where Carnations are preſerved; for they are ſo fond of theſe flowers, that if care is not taken to prevent them, they will entirely deſtroy them, by eating off the ſweet part at the bottom of the petals or leaves. To prevent which, moſt people have ſtands erected, which have a baſon of earth or lead round each ſupporter, which is conſtantly kept filled with water. See the article CARNATION.

Others hang the hollow claws of crabs and lobſters upon ſticks in divers parts of the garden, into which theſe vermin get; and by often ſearching them, you will deſtroy them without much trouble, which will be of great ſervice to your wall fruit, for theſe are great deſtroyers of all ſoft fruits.

EBENUS. Lin. Gen. Nov. Barba Jovis. Tourn. Inſt. R. H. tab. 419. Ebony.

The CHARACTERS are,

The empalement of the flower is of one leaf, which is divided into five acute ſegments at the top; the flower is of the butterfly kind; the vexillum is obtuſe and reflexed; the wings are equal in length with the vexillum; they are broad and roundiſh; the keel is ſhorter and turns upwards. It hath ten ſtamina, nine joined, ſtanding together, and the other ſeparate, terminated by ſingle ſummits. In the bottom is ſituated an oblong germen, ſupporting a riſing ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes an oblong ſwelling pod, opening with two valves, and incloſing three or four kidney-ſhaped ſeeds. This is diſtinguiſhed from Trifolium, by the bracteæ which are ſituated between the flowers on the ſpike.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, intitled Diadelphia Decandria, the flowers having ten ſtamina in two bodies.

We know but one SPECIES of this genus, viz.

EBENUS. Lin. Sp. Plant. 764. Ebony. Barba Jovis lagopoides, Cretica, fruteſcens, incana, flore ſpicato purpureo amplo. Breyn. Prod. 2. *Shrubby Hares-foot Jupiter's Beard of Crete with hoary leaves, and a large purple flower growing in ſpikes.*

This plant grows naturally in Crete, and in ſome of the iſlands of the Archipelago; it riſes with a ſhrubby ſtalk three or four feet high, which puts out ſeveral ſide branches, garniſhed with hoary leaves at each joint, which are compoſed of five narrow ſpear-ſhaped lobes, which join at their tails to the foot-ſtalk, and ſpread out like the fingers of a hand. The branches are terminated by thick ſpikes of large purple flowers, which are of the butterfly or Pea-bloom kind; the ſpikes are from two to three inches long, ſo make a fine appearance, eſpecially when the plants

are ſtrong, and have many ſpikes of flowers on them. It flowers in June and July, and in very warm ſeaſons will ſometimes perfect their ſeeds in England.

This is propagated by ſeeds, which ſhould be ſown in the autumn, for thoſe which are ſown in the ſpring often fail; they muſt be ſown in pots, and placed under a frame in the winter, where they may be protected from froſt. In the ſpring the plants will come up, which ſhould be kept clean from weeds, and refreſhed now and then with water. When theſe have acquired ſtrength enough to be removed, they ſhould be each planted in a ſeparate ſmall pot filled with light earth, and plunged into a moderate hot-bed juſt to promote their taking new root; then they ſhould be gradually inured to bear the open air, into which they ſhould be removed the latter end of May, placing them in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into ſhelter; for theſe plants will not live in the open air through the winter, nor ſhould they be too tenderly treated, leſt they draw up weak. I have found them ſucceed beſt when placed in an airy glaſs-caſe without fire in winter, where they will have more ſun and air than in a green-houſe. During the winter ſeaſon, the plants muſt be ſparingly watered, but in the ſummer they will require to be often refreſhed. The other management is the ſame as for other of the hardier exotic plants, among which this will make a fine variety.

EBULUS. See SAMBUCUS.

ECHINATE SEEDS [of echinus, *Lat.* a hedge-hog,] ſuch ſeeds of plants as are prickly and rough.

ECHINOMELOCACTUS. See CACTUS.

ECHINOPHORA. Lin. Gen. Plant. 292. Tourn. Inſt. R. H. 656. tab. 423. [of Ἐχῖνος, a hedge-hog, and φέρω, *Gr.* to bear.] Prickly Parſnep.

The CHARACTERS are,

It hath an umbellated flower; the general umbel is compoſed of many ſmaller, the intermediate being the ſhorteſt; the involucrum of the general umbel ends in acute thorns; thoſe of the rays are turbinated, of one leaf, cut into ſix unequal parts, with acute points; the perianthium is divided into five parts, and ſits on the germen; the general umbel is uniform; the flowers have five unequal petals which ſpread open; they have each five ſtamina, terminated by roundiſh ſummits. Under the perianthium is ſituated an oblong germen within the empalement, ſupporting two ſtyles, crowned by ſingle ſtigmas; the germen afterward turns to two ſeeds, which are incloſed in the hard empalement.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, intitled Pentandria Digynia, the flower having five ſtamina and two ſtyles.

The SPECIES are,

1. ECHINOPHORA (*Spinoſa*) foliolis ſubulato-ſpinoſis integerrimis. Lin. Sp. Plant. 344. *Prickly-headed Parſnep, with awl-ſhaped prickly leaves which are entire.* Echinophora maritima ſpinoſa. Tourn. Inſt. 656. *Prickly maritime Parſnep.*

2. ECHINOPHORA (*Tenuifolia*) foliolis inciſis inermibus. Lin. Sp. Plant. 344. *Prickly-headed Parſnep, whoſe ſmall leaves are cut, but have no thorns.* Echinophora paſtinacæ folio. Tourn. Inſt. 656. *Prickly-headed Parſnep with a Carrot leaf.*

Theſe plants grow naturally on the borders of the Mediterranean ſea; they are preſerved in the gardens of botany for the ſake of variety; they have both perennial roots, which creep in the ground; the firſt hath branching ſtalks, growing five or ſix inches high, which are garniſhed with ſhort thick leaves, that terminate in two or three ſharp thorns; they are placed by pairs oppoſite: the flowers grow in an umbel, ſitting upon a naked foot-ſtalk, which ariſes from the ſide of the ſtalk; they are white, and under the umbel is ſituated an involucrum, compoſed of ſeveral leaves, which terminate in ſharp ſpines. It flowers in June, but ſeldom ripens ſeeds in this country.

The ſecond ſort riſes near a foot and a half high; from the principal ſtalk are ſent out two ſide branches

at

at every joint, which are placed oppoſite; the lower part is garniſhed with leaves, which are finely divided like thoſe of the Carrot; the flowers grow in ſmall umbels at the extremity of the branches, having a ſhort prickly involucrum. This flowers in July, but doth not ripen ſeeds in England.

Theſe plants are propagated by their creeping roots in England, as they do not produce ſeeds here: the beſt time to tranſplant them is the beginning of March, a little before they ſhoot. The roots ſhould be planted in a gravelly or ſandy ſoil, and in a warm ſituation, or otherwiſe they ſhould be covered in the winter to prevent the froſt from deſtroying them.

ECHINOPS. Lin. Gen. Plant. 829. Echinopus. Tourn. Inſt. R. H. tab. 463. Globe Thiſtle.

The CHARACTERS are,

It hath a permanent perianthium, which is oblong, angular, and imbricated; the flower hath one funnel-ſhaped petal, which is divided at the top into five parts, which ſpread open and are reflexed. It hath five ſhort hairy ſtamina, terminated by cylindrical ſummits. In the bottom of the tube is ſituated an oblong germen, ſupporting a ſlender ſtyle the length of the tube, crowned by two oblong depreſſed ſtigmas which turn back; the germen afterward becomes an oblong oval ſeed narrowed at the baſe, but obtuſe and hairy at the top.

This genus of plants is ranged in the firſt ſection of Linnæus's ſeventeenth claſs, intitled Syngeneſia Polygamia Æqualis. This ſection includes thoſe plants which have only hermaphrodite fruitful florets.

The SPECIES are,

1. ECHINOPS (*Sphærocephalus*) capitulis globoſis pubeſcentibus. Lin. Sp. Plant. 1314. *Globe Thiſtle with globular heads and hairy leaves.* Echinopus major. J. B. 3. p. 69. *Greater Globe Thiſtle.*
2. ECHINOPS (*Ritro*) capitulo globoſo, foliis ſupra glabris. Lin. Sp. Plant. 1314. *Globe Thiſtle with a globular head, and the upper ſide of the leaves ſmooth.* Echinopus minor. J. B. 3. 72. *Smaller Globe Thiſtle.*
3. ECHINOPS (*Strigoſus*) capitulis faſciculatis calycibus, lateralibus ſterilibus, foliis ſuprà ſtrigoſis. Lin. Sp. Plant. 1315. *Globe Thiſtle with bundled heads, whoſe ſide empalements are barren, and wing-pointed leaves.* Echinopus minor annuus, magno capite. Tourn. Inſt. 463. *Smaller annual Globe Thiſtle with a large head.*
4. ECHINOPS (*Græcus*) caule unicapitato, foliis ſpinoſis, omnibus pinnatifidis villoſis, radice reptartice. *Globe Thiſtle with one head on each ſtalk, prickly leaves, which are all wing-pointed and woolly, and a creeping root.* Echinopus Græcus, tenuiſſime diviſus & lanuginoſus, capite minori cæruleo. Tourn. Cor. 34. *Greek Globe Thiſtle whoſe leaves are divided into narrow ſegments and are woolly, with a ſmaller blue head.*

The firſt is the common Globe Thiſtle, which has been long cultivated in ſome gardens for the ſake of variety; this grows naturally in Italy and Spain; it hath a perennial root, from which ariſe many ſtalks that grow to the height of four or five feet; theſe are garniſhed with long jagged leaves, which are divided into many ſegments almoſt to the midrib, the jags ending in ſpines; they are of a dark green on their upper ſide, but woolly on their under; the flowers are collected in globular heads, ſeveral of theſe grow upon each ſtalk; the common hath blue flowers, but there is a variety of it with white. It flowers in July, and the ſeeds ripen in Auguſt.

This plant is eaſily propagated by ſeeds, which, if permitted to ſcatter, the plants will come up in plenty, ſo a few of them may be tranſplanted to the places where they are deſigned to remain to flower; they require no other culture but to keep them clean from weeds: the ſecond year they will flower and produce ſeeds, and the roots will continue two or three years after; but if the ſeeds ſcatter, the plants will become troubleſome weeds; to prevent which, the heads ſhould be cut off as ſoon as the ſeeds are ripe.

The ſecond ſort grows in the ſouth of France and in Italy; this hath a perennial creeping root, which ſends up ſeveral ſtrong ſtalks that riſe two feet high,

garniſhed with leaves, which are cut into many fine ſegments to the midrib, which are ſet with prickles, and are white on their under ſide: the ſtalks branch out toward the top; each of theſe branches is terminated by a globular head of flowers, which are ſmaller than thoſe of the firſt, and of a deeper blue; there is alſo a variety of this with white flowers. This flowers about the ſame time as the firſt, and is propagated in the ſame way. Theſe will both grow in almoſt any ſoil or ſituation.

The third ſort grows naturally in Spain and Portugal: this is an annual plant, which riſes with a ſtiff white ſtalk two feet high, garniſhed with divided leaves, ending in many points which have ſpines; their upper ſide is green, and covered with brown hairs, their under ſide white and woolly; the ſtalk is terminated by one large head of pale blue flowers. Theſe appear in July, and if the ſeaſon proves warm and dry, the ſeeds will ripen in autumn, but in wet cold years they rarely ripen here.

Theſe ſeeds ſhould be ſown in the ſpring, upon a border of light earth, where the plants are to remain; and they require no other management, but to thin them where they are too cloſe.

The fourth ſort grows naturally in Greece, from whence Dr. Tournefort ſent the ſeeds to the royal garden at Paris: this hath a perennial creeping root, by which it multiplies faſt enough; the ſtalks riſe about a foot high, and are cloſely garniſhed with leaves which are ſhorter and much finer divided than either of the former ſorts; theſe are hoary, and armed on every ſide with ſharp thorns; the ſtalks are terminated by one middle-ſized globular head of flowers, which in ſome are blue, and in others white. They appear the latter end of June, and in warm ſeaſons the ſeeds will ripen well in England. This is eaſily propagated by its creeping roots, or from ſeeds; it loves a dry ſoil and a warm ſituation.

ECHINUS, *Lat.* is the prickly head or cover of the ſeed or top of any plant, ſo called from its likeneſs to a hedgehog.

ECHIUM. Lin. Gen. Plant. 157. Tourn. Inſt. R. H. 135. tab. 54. [of Ἔχις, *Gr.* a viper, becauſe the ripe ſeed of this plant reſembles the head of a viper. It is called Herba Viperaria, becauſe the ancients believed that this plant killed vipers.] Viper's Bugloſs; in French, *Viperine.*

The CHARACTERS are,

The flower hath a permanent empalement, divided into five ſegments. It hath one petal with a ſhort tube, having an erect broad brim, cut into five parts, and is obtuſe; the two upper being longer than the lower, which are acute and reflexed. It hath five awl-ſhaped ſtamina, terminated by oblong proſtrate ſummits. In the bottom are ſituated four germen with one ſlender ſtyle, crowned by an obtuſe bifid ſtigma; the germen afterward become ſo many roundiſh pointed ſeeds, incloſed in the rough empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. ECHIUM (*Anglicum*) caule ſimplici erecto, foliis lanceolatis, floribus ſpicatis lateralibus, ſtaminibus corolla æquantibus. *Viper's Bugloſs with a ſingle erect ſtalk, having rough ſpear-ſhaped leaves, and flowers in ſpikes proceeding from the ſide, with the ſtamina equalling the petal.* Echium vulgare C. B. P. 254. *Common Viper's Bugloſs.*
2. ECHIUM (*Vulgare*) caule ſimplici erecto, foliis caulinis lanceolatis hiſpidis, floribus ſpicatis lateralibus ſtaminibus corollâ longioribus. *Viper's Bugloſs with a ſingle erect ſtalk, having rough narrow ſpear-ſhaped leaves, flowers growing in ſhort ſpikes on the ſides, and ſtamina longer than the petal.* Lycopſis Anglica. Lob. *Engliſh Lycopſis.*
3. ECHIUM (*Italicum*) corollis vix calycem excedentibus, margine villoſis. Hort. Upſal. 35. *Viper's Bugloſs, whoſe petals ſcarce exceed the empalement, having hairy borders.* Echium majus & aſperius, flore albo. C. B. P. 255. *Great rough Viper's Bugloſs with a white flower.*

4. Echium (*Luſitanicum*) corollis ſtamine longioribus. Lin. Sp. 200. *Viper's Bugloſs with the petal of the flower longer than the ſtamina.* Echium ampliſſimo folio, Luſitanicum. Tourn. *Portugal Viper's Bugloſs with a large leaf.*
5. Echium (*Creticum*) calycibus fructeſcentibus diſtantibus, caule procumbente. Lin. Hort. Upſal. 35. *Viper's Bugloſs with fruitful empalements growing at a diſtance, and a trailing ſtalk.* Echium Creticum latifolium rubrum. C. B. P. 254. *Broad-leaved Viper's Bugloſs of Candia, having a red flower.*
6. Echium (*Anguſtifolium*) caule ramoſo, aſpero, foliis calloſo-verrucoſis, ſtaminibus corollâ longioribus. *Viper's Bugloſs with a rough branching ſtalk, warted leaves, and ſtamina longer than the petal.* Echium Creticum anguſtifolium rubrum. C. B. P. 254. *Narrow-leaved Viper's Bugloſs of Candia, having a red flower.*
7. Echium (*Fruticoſum*) caule fruticoſo. Hort. Cliff. 43. *Viper's Bugloſs with a ſhrubby ſtalk.* This is the Echium Africanum fruticans, foliis piloſis. Hort. Amſt. 2. p. 107. *Shrubby African Viper's Bugloſs, having hairy leaves.*

The firſt ſort grows naturally in Germany and Auſtria, from whence I received the ſeeds. This and our common Viper's Bugloſs, which is the ſecond, have been confounded by moſt of the writers on botany, who have ſuppoſed they were the ſame plant, whereas they are very different; for the leaves of this are ſhorter, and much broader than thoſe of the ſecond; the ſpikes of flowers are much longer, and the ſtamina of the flowers are in this equal in length with the petal; whereas thoſe of the ſecond ſtand out much beyond the petal, which is an eſſential difference.

The ſecond ſort grows naturally upon chalky lands in moſt parts of England: this is what Lobel titles Lycopſis Anglica, and has been generally taken for the common Echium.

The third ſort grows naturally in the ſouth of France, in Italy, and the iſle of Jerſey; this riſes with an upright hairy ſtalk; the flowers are produced in ſhort ſpikes on the ſide of the branches; they are ſmall, and ſcarce appear above the empalements; ſome plants have white flowers, and others are purpliſh; the empalements of the flowers are very hairy, and cut into acute ſegments.

The fourth ſort grows naturally in Portugal and Spain; the lower leaves of this are more than a foot long, and two inches broad in the middle, gradually leſſening to both ends; theſe are covered with ſoft hairs. The ſtalks grow two feet high; the flowers are in ſhort ſpikes coming from the ſide of the ſtalks; the petals of theſe are longer than the ſtamina.

The fifth ſort grows naturally in Crete; this hath trailing hairy ſtalks, which grow about a foot long, and put out ſeveral ſide branches, garniſhed with hairy ſpear-ſhaped leaves about three inches long, and three quarters of an inch broad, ſitting cloſe to the ſtalks. The flowers come out on ſlender ſpikes upon long foot-ſtalks, which come from the wings of the leaves; they are large, of a reddiſh purple colour, which turns to a fine blue when they are dried; theſe ſtand at a diſtance from each other on the ſpike. It is an annual plant, which flowers in July and decays in autumn.

The ſixth ſort hath branching ſtalks which grow a foot and a half long, declining toward the ground; they are covered with ſtinging hairs; the leaves are four inches long, and not more than half an inch broad; theſe are pretty much warted, and are hairy. The flowers grow in looſe ſpikes from the ſide of the ſtalks, and alſo at the end of the branches; they are of a reddiſh purple colour, but not ſo large as thoſe of the former ſort, and the ſtamina of theſe are longer than the petal. This is alſo an annual plant, which grows naturally in Crete.

Theſe are moſt of them biennial plants, except the fifth and ſixth ſorts, which are annual, and are the moſt beautiful of all the kinds: the ſeeds of theſe muſt be ſown every year, in the places where they are deſigned to remain; and the plants require no other culture but to keep them clean from weeds, and thin them where they grow too cloſe. In July they flower, and their ſeeds ripen in five or ſix weeks after. The ſeeds of the other ſorts being ſown in the ſpring, will the ſecond ſummer after produce flowers and ſeeds, after which they ſeldom continue. They all delight in a rubbiſhy gravelly ſoil, and will grow upon the tops of old walls or buildings; where, when once they have eſtabliſhed themſelves, they will drop their ſeeds, and thereby maintain a ſucceſſion of plants without any care, and on theſe places they appear very beautiful.

The ſeventh ſort grows naturally at the Cape of Good Hope, from whence the ſeeds were brought to Holland, where the plants are now preſerved in ſome curious gardens. This riſes with a ſhrubby ſtalk two or three feet high, dividing upward into ſeveral branches, garniſhed with oval leaves placed alternate, whoſe baſe ſits cloſe to the ſtalk; they are hairy, and of a light green colour. The flowers are produced ſingly between the leaves at the end of the branches; they are of a purple colour, and in ſhape much like thoſe of the fifth ſort. Theſe appear in May and June, but the ſeeds do not ripen in England.

It is propagated by ſeeds, when they can be obtained, which ſhould be ſown in pots filled with light ſandy earth ſoon after they are received. Theſe may be expoſed to the open air till the beginning of October, when the pots ſhould be placed under a frame, to guard them from froſt; but in mild weather, they ſhould be opened to have the free air, to prevent the ſeeds from vegetating till the winter is paſt; for if the plants come up at that ſeaſon, their ſtems will be weak and full of juice, and very liable to rot with damps; therefore it is much better if the plants do not come up till toward March, which is the uſual time of their appearing, when the ſeeds are not forced by warmth. When the plants are fit to remove, they ſhould be each planted into a ſmall pot filled with light earth, and placed under a frame to forward their putting out new roots; then they ſhould be gradually inured to bear the open air, and the latter end of May be placed abroad in a ſheltered ſituation, where they may remain till the beginning of October; at which time they muſt be removed into an airy glaſs-caſe, where they may enjoy the ſun and have free air in mild weather. During the winter ſeaſon theſe plants muſt be ſparingly watered; for as their ſtems are ſucculent, ſo much moiſture will cauſe them to rot. In the ſummer they ſhould be ſet abroad in a ſheltered ſituation, and treated in the ſame manner as other plants from the ſame country.

EDERA QUINQUEFOLIA. See Vitis.

EDGINGS. The beſt and moſt durable plant for edgings in a garden is Box; which, if well planted, and rightly managed, will continue in beauty ſeveral years: the beſt ſeaſon for planting this, is either in the autumn, or very early in the ſpring; for if you plant it late, and the ſeaſon ſhould prove hot and dry, it will be very ſubject to miſcarry, unleſs great care be taken to ſupply it with water. The beſt ſort for this purpoſe is the dwarf Dutch Box.

Theſe edgings are only planted upon the ſides of borders next walks, and not (as the faſhion was ſome years ago) to plant the edgings of flower-beds, or the edges of fruit-borders in the middle of gardens, unleſs they have a gravel-walk between them; which renders it proper to preſerve the walks clean, by keeping the earth of the borders from waſhing down into the walks in hard rains.

It was alſo the practice formerly to plant edgings of divers ſorts of aromatic herbs, as Thyme, Savory, Hyſſop, Lavender, Rue, &c. But as theſe very ſoon grow woody, ſo that they cannot be kept in due compaſs, and in hard winters they are often killed in patches, whereby the edgings are rendered incomplete, they are now ſeldom uſed for this purpoſe.

Some people make edgings of Daiſies, Thrift, Catch-fly, and other flowering plants; but theſe alſo re-

quire to be tranſplanted every year, in order to have them handſome; for they ſoon grow out of form, and are ſubject alſo to decay in patches; ſo that there is not any plant which ſo completely anſwers the deſign as Dwarf Box, which muſt be preferred to all others for this purpoſe.

EFFLORESCENCE, *Lat.* the blowing out of a flower.

To EGERMINATE, *Lat.* to bud or ſpring out.

EHRETIA. Trew. tab. 24.

The CHARACTERS are,

It hath a ſmall, permanent, bell-ſhaped empalement of one leaf, cut into five points; the flower hath one petal, whoſe tube is longer than the empalement, cut into five ſegments; it hath five awl-ſhaped ſpreading ſtamina the length of the corolla, terminated by roundiſh incumbent ſummits, and a roundiſh germen, ſupporting a ſlender ſtyle the length of the ſtamina, crowned by an obtuſe indented ſtigma; the germen afterward becomes a round berry with one cell, incloſing four angular ſeeds.

This genus of plants is ranged in the firſt order of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

The SPECIES are,

1. EHRETIA (*Tinifolia*) foliis oblongo-ovatis integerrimis glabris, floribus paniculatis. Amœn. Acad. 5. p. 395. *Ehretia with oblong, oval, entire, ſmooth leaves, and flowers growing in panicles.*
2. EHRETIA (*Bourreria*) foliis ovatis integerrimis lævibus, floribus ſubcorymboſis, calycibus glabris. Lin. Sp. 275. *Ehretia with oval entire leaves, flowers growing in a ſort of corymbus, and ſmooth empalements.* Bourreria fructibus ſucculentis. Jacq. Amer.

The ſeeds of the firſt ſort were ſent me from Jamaica in the year 1734, which ſucceeded in the Chelſea garden, where the plants have grown to the height of eight or nine feet, with ſtrong woody ſtems, and have ſeveral times produced their flowers, but have not perfected their ſeeds as yet in England. This is by Dr. Linnæus ſuppoſed to be the ſame plant mentioned by Sir Hans Sloane, under the title of Ceraſo affinis arbor baccifera racemoſa, flore albo pentapetalo, fructu flavo monopyreno eduli dulce. Hiſt. Jam. 2. p. 94. But I differ in my opinion from him, for the leaves of our plant are ſmoother, longer, and more pointed, and the corymbus of flowers is much longer than in Sir Hans's plant.

This hath a rough woody ſtalk, which divides into ſeveral irregular branches, garniſhed with oblong, oval, ſmooth leaves, nine inches long, three broad in the middle, ending in acute points; the flowers are white, and produced in an oblong corymbus toward the end of the branches; they have one petal in each, which is cut at the top into five ſegments which are reflexed. Theſe appear toward the end of July, but fall away without being ſucceeded by ſeeds.

The ſeeds of the ſecond ſort I received from Surinam, which ſucceeded in the Chelſea garden. This hath a woody upright ſtem, covered with a brown bark, ſending out branches regularly toward the top, garniſhed with ſmooth oval leaves placed alternate, having ſhort foot-ſtalks; the leaves are ſix inches long, and more than two broad, ending with blunt oval points. As this ſort hath not produced flowers here, ſo I can give no farther account of them. This Doctor Linnæus ſuppoſes to be the ſame with a plant figured by Mr. Cateſby, under the title of Pittonia ſimilis laureolæ foliis, floribus albis, baccis rubris. But in this he is alſo miſtaken, for there are plants in the Chelſea garden, which were raiſed from ſeeds ſent from the Bahama Iſlands, which are very different from the former.

Theſe plants are too tender to thrive abroad in England, where they require a moderate warm ſtove in winter; but when the plants have acquired ſtrength, they may be placed in the open air during the heat of ſummer; but it ſhould be in a ſheltered ſituation, and when the evenings grow cold in the autumn, they muſt be removed into ſhelter.

They are both propagated by ſeeds when they can be obtained, which ſhould be ſown in ſmall pots plunged into a hot-bed; they may alſo be propagated by laying down their branches, but theſe are long before they put out roots.

ELÆAGNUS. Lin. Gen. Plant. 148. Tourn. Cor. 53. tab. 489. [from Ἐλαία, an Olive, and Ἄγνὸς Vitex; becauſe this plant hath leaves like thoſe of the Chaſte-tree, and a fruit like an Olive.] Oleaſter, or wild Olive.

The CHARACTERS are,

The flower hath a bell-ſhaped empalement of one leaf, which is quadrifid, rough on the outſide, but coloured within. It hath no petals, but four ſhort ſtamina which are inſerted in the diviſions of the empalement, and are terminated by oblong proſtrate ſummits. At the bottom is ſituated a roundiſh germen ſupporting a ſingle ſtyle, crowned by a ſingle ſtigma; the germen afterward becomes an obtuſe oval fruit, with a puncture at the top, incloſing one obtuſe nut.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, from the flower having four ſtamina and one ſtyle.

The SPECIES are,

1. ELÆAGNUS (*Spinoſus*) aculeatus, foliis lanceolatis. *Prickly wild Olive with ſpear-ſhaped leaves.* Elæagnus Orientalis latifolius, fructumaximo. Tourn. Cor. App. 52. *Eaſtern broad-leaved wild Olive with a large fruit.*
2. ELÆAGNUS (*Inermis*) inermis, foliis lineari-lanceolatis. *Wild Olive without thorns, and narrow ſpear-ſhaped leaves.* Elæagnus Orientalis anguſtifolius, fructu parvo olivæformi ſubdulci. Tourn. Cor. App. 52. *Eaſtern wild Olive with narrow leaves, and a ſmall, ſweet, Olive-ſhaped fruit.*
3. ELÆAGNUS (*Latifolia*) foliis ovatis. Prod. Leyd. 250. *Wild Olive with oval leaves.* Elæagnus foliis rotundis maculatis. Burm. Pl. Zeyl. 92. *Wild Olive with round ſpotted leaves.*

The firſt and ſecond ſorts Dr. Tournefort found growing naturally in the Levant, and the firſt I take to be the common ſort, which grows naturally in Bohemia, of which I ſaw ſome trees growing in the curious garden of the late Dr. Boerhaave, near Leyden, in Holland. The leaves of this ſort are not more than two inches long, and about three quarters of an inch broad in the middle; they are white, and have a ſoft cottonny down on their ſurface; at the foot-ſtalk of every leaf, there comes out a pretty long ſharp thorn; as the leaves are placed alternate on the branches, ſo the ſpines come out on each ſide the branches; juſt below the foot-ſtalks of the leaves, they are alternately longer: the flowers are ſmall, the inſide of the empalement is yellow, and they have a ſtrong ſcent when fully open.

The ſecond ſort hath no thorns on the branches, the leaves are more than four inches long, and not half an inch broad; they are very ſoft, and have a ſhining appearance like ſattin. The flowers come out at the foot-ſtalks of the leaves, ſometimes ſingly, at other times two, and frequently three at the ſame place; the outſide of the empalement is ſilvery and ſtudded, the inſide of a pale yellow, having a very ſtrong ſcent. This flowers in July, and ſometimes the flowers are ſucceeded by fruit. This is the ſort which is moſt commonly preſerved in the Engliſh gardens.

Theſe plants may be propagated by laying down the young ſhoots in autumn, which will take root in one year, when they may be cut off from the old trees, and either tranſplanted into a nurſery for two or three years to be trained up, or into the places where they are to remain. The beſt ſeaſon for tranſplanting of theſe trees is in the latter end of February, or the beginning of March; though they may be removed at Michaelmas, provided the roots are mulched, to protect them from ſevere froſt in winter. Theſe plants ſhould be placed where they may be ſcreened from ſtrong winds, for they grow very freely, and are very ſubject to be ſplit down by the wind, if they are too much expoſed.

Theſe trees commonly grow to twelve or fourteen feet high, and when they are intermixed with other trees of the ſame growth, make a pretty diverſity; for their leaves being of a ſilver colour, are eaſily diſtnguiſhed at a diſtance.

The third ſort grows naturally at Ceylon, and in ſome other parts of India. This is pretty rare at preſent in the Engliſh gardens, but ſome years paſt there were ſeveral pretty large plants of it growing in the garden at Hampton Court. This riſes with a woody ſtem to the height of eight or nine feet, dividing into many branches, garniſhed with oval ſilvery leaves, which have ſeveral irregular ſpots of a dark colour on their ſurface; they are placed alternately on the branches, and continue all the year. The flowers I have not ſeen, though ſome of the trees at Hampton Court produced flowers, but I was not ſo lucky as to ſee them.

This ſort requires a warm ſtove to preſerve it in this country, for it is too tender to live in the open air, excepting for a ſhort time in the warmeſt part of ſummer.

The two firſt ſorts are extremely hardy, ſo are not injured by the froſt, but the trees are not of very long duration, therefore young plants ſhould be raiſed once in three or four years, to preſerve the kinds.

ELATERIUM. See Momordica.

ELATINE. See Linaria.

ELECAMPANE. See Inula.

ELEPHANTOPUS. Lin. Gen. Plant. 827. Vaill. Act. Par. 1719. Dill. Hort. Elth. 104. [of Ἐλέφας, an elephant, and Πῆς, a foot,] Elephant's foot; ſo called by Monſieur Vaillant, becauſe he ſays the under leaves of the firſt ſort ſomewhat reſemble an Elephant's foot.

The Characters are,

There are many flowers collected together in one common large involucrum which is permanent, and each empalement contains four or five florets; the florets are tubulous and hermaphrodite; they have one petal which is tongue-ſhaped; the brim is narrow, and divided into five equal parts; they have five very ſhort hairy ſtamina, terminated by cylindrical ſummits. In the bottom is ſituated an oval germen, ſupporting a ſlender ſtyle, crowned by two ſlender ſtigmas; the germen afterward becomes a ſingle compreſſed ſeed crowned with briſtles, ſitting on a placenta incloſed in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's ſeventeenth claſs, which includes the plants with floſculous flowers, whoſe florets are all hermaphrodite and fruitful.

The Species are,

1. Elephantopus (*Scaber*) foliis oblongis ſcabris. Hort. Cliff. 390. *Elephantopus with oblong rough leaves.* Elephantopus conyzæ folio. Vaill. Mem. Acad. Scien. 1719. *Elephant's foot with a Flea-bane leaf.*
2. Elephantopus (*Tomentoſus*) foliis ovatis tomentoſis. Gron. Virg. 90. *Elephantopus with oval woolly leaves.* Elephantopus helenii folio, purpuraſcente flore. Houſt. MSS. *Elephantopus with an Elecampane leaf, and a purpliſh flower.*

The firſt ſort grows naturally in both the Indies, I have received it from ſeveral parts of America; this ſends out many oblong rough leaves, which ſpread near the ground; between theſe in the ſpring ariſes a branching ſtalk, little more than a foot high. The ſide branches are ſhort, and are generally terminated by two heads of flowers, each ſtanding upon a ſhort foot-ſtalk. The heads contain ſeveral hermaphrodite florets, included in a common involucrum, compoſed of four oval leaves, ending in acute points. The florets are of a pale purple colour. They appear in July, but are rarely ſucceeded by ſeeds in England.

The ſecond ſort grows naturally in South Carolina; the plants of this have frequently come up in the earth, which has been ſent over from thence with other plants as weeds; this hath ſeveral oval woolly leaves, four inches long, and three inches broad, growing from the root, having many tranſverſe nerves, running from the midrib to the ſides; they

ſpread flat on the ground, and between theſe ariſe a ſtiff ſtalk, about a foot high, which divides into ſeveral branches, each being terminated by two flowers, which are compoſed of ſeveral florets, incloſed in a four-leaved involucrum; two of theſe leaves are alternately larger than the other. The involucrum is longer than the florets, ſo they do but juſt appear within the two larger leaves; the flowers make no appearance. They appear in July, but the ſeeds never ripen in this country.

The firſt ſort hath a perennial root, but an annual ſtalk. If this is planted in pots, and ſheltered in the winter from froſt, it may be preſerved ſeveral years, and the plants will annually flower; but the ſecond ſort ſeldom continues longer than two years.

Theſe plants are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are come up, they muſt be tranſplanted into pots filled with freſh light earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; then you ſhould let them have a large ſhare of freſh air in warm weather, and they will require to be frequently refreſhed with water.

ELEPHAS. See Rhinanthus.

ELICHRYSUM. See Gnaphalium.

ELM. See Ulmus.

ELLISIA.

The Characters are,

The flower has a permanent empalement, compoſed of five ſmall, erect, ſpreading leaves; it is of one petal, funnel-ſhaped the length of the cup, cut into five obtuſe ſegments at top; it hath five ſtamina the length of the tube, terminated by roundiſh ſummits, and a round germen ſupporting a ſhort ſlender ſtyle, crowned by an oblong bifid ſtigma; the germen afterward becomes a roundiſh fleſhy berry with two cells, incloſing two rough ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, intitled Pentandria Monogynia, the flower having five ſtamina and one ſtyle.

We know but one Species of this genus, viz.

Ellisia (*Nyctelea.*) Lin. Sp. 1662. *Tea-leaved Elliſia*

This plant grows naturally in Jamaica, where it forms a buſhy ſhrub about ſix or ſeven feet high. I have raiſed many of the plants from ſeeds, ſome of which are now four or five feet high, but have not as yet produced flowers. It ſends out many branches from the ſtem, ſo as to form a thick buſh; the branches are generally covered with a dark purple bark; the leaves alſo when the plants are expoſed in ſummer turn of the ſame colour, but after they have been ſome time removed into the ſtove, they recover their verdure again. The leaves are placed oppoſite on the branches, which are an inch and a half long, ſpear-ſhaped and indented on their edges, and have commonly two or three ſmall leaves ſitting cloſe to the branches; at the foot-ſtalks of the larger leaves, and at the ſame place, ariſes pretty long black ſpines, generally placed oppoſite toward the lower part of the branches, but upward they are alternate, and the ends of the branches are without thorns. As the plants have not as yet produced flowers in England, ſo I can give no farther account of them.

This plant may be propagated by cuttings, which if planted in ſmall pots filled with light earth, and plunged into a moderate hot-bed, covering them cloſe with a hand-glaſs any time in July, will put out roots in about two months, ſo may then be ſeparated and put into ſmall pots, plunging them again into the hot-bed to promote their taking new root, after which they ſhould be gradually inured to the open air; but the beginning of October they ſhould be removed into the dry ſtove, where, during the winter, they ſhould have a moderate warm air, in which they will thrive better than in a great heat.

When ſeeds of this plant can be procured from abroad, if they are ſown on a hot-bed the plants will riſe eaſily, and may be afterward treated in the ſame way as is directed for thoſe raiſed by cuttings.

EMERUS. Tourn. Inſt. R. H. 650. Coronilla. Lin. Gen. Plant. 789. [this name was given it by Theophraſtus, and reſtored by Cæſalpinus.] Scorpion Sena.

The CHARACTERS are,

The flower hath a very ſhort empalement of one leaf, divided into five parts which is permanent. The flower is of the butterfly kind. The tails of the petals are much longer than the empalement. The ſtandard is narrow, and ſhorter than the wings, over which it is arched. The wings are large and concave. The keel is heart-ſhaped and reflexed. There are ten ſtamina in each, one of which ſtands ſeparate, the other nine are joined; theſe are ſituated in the ſtandard. In the empalement is ſituated an oblong ſlender germen, ſupporting a ſlender ſtyle, crowned by a taper ſtigma. The germen afterward becomes a taper cylindrical pod, ſwelling in thoſe parts where the ſeeds are lodged, which are alſo cylindrical.

This genus of plants is ranged in the third ſection of Tournefort's twenty-ſecond claſs, which includes the trees and ſhrubs with a butterfly flower, whoſe leaves are placed by pairs along the midrib. Dr. Linnæus has joined this genus, and alſo the Securidacca of Tournefort to the Coronilla; but hereby the number of ſpecies are increaſed, and therefore it is much better to keep them ſeparate, as there are more eſſential differences between them, than in ſome of the other genera of this claſs which he has ſeparated.

The SPECIES are,

1. EMERUS (*Major*) caule fruticoſo, pedunculis longioribus caule angulato. *Scorpion Sena with a ſhrubby ſtalk, longer foot-ſtalks to the flowers, and angular ſtalks.* Emerus. Cæſalp. *Scorpion Sena, vulgò.*
2. EMERUS (*Minor*) foliolis obcordatis, pedunculis brevioribus, caule fruticoſo. *Scorpion Sena with long heart-ſhaped leaves, ſhorter foot-ſtalks to the flowers, and a ſhrubby ſtalk.* Emerus minor. Tourn. Inſt. R. H. 650. *Leſſer Scorpion Sena.*
3. EMERUS (*Herbacea*) caule erecto, herbaceo, foliolis multijugatis, floribus ſingularibus alaribus, ſiliquis longiſſimis erectis. *Scorpion Sena with an erect herbaceous ſtalk, the leaves compoſed of many pair of lobes, ſingle flowers proceeding from the ſides of the ſtalks, and very long erect pods.* Emerus ſiliquis longiſſimis & anguſtiſſimis. Plum. Cat. 19. *Emerus with very long and narrow pods.*

The firſt of theſe ſhrubs is very common in all the nurſeries near London; this riſes with weak ſhrubby ſtalks to the height of eight or nine feet, dividing into many ſlender branches, garniſhed with winged leaves, compoſed of three pair of lobes (or ſmall leaves) terminated by an odd one. The flowers come out upon long foot-ſtalks from the ſide of the branches, two or three of theſe foot-ſtalks ariſing from the ſame point; each of theſe ſuſtains two, three, or four yellow butterfly flowers; theſe appear in May, and are frequently ſucceeded by long ſlender pods, which are taper, ſwelling in thoſe parts where the ſeeds are lodged, and hang downward; theſe ſhrubs continue long in flower, eſpecially in cool ſeaſons, and frequently flower again in autumn, which renders them valuable.

The ſecond ſort riſes with many ſhrubby ſtalks like the firſt, but not more than half the height; this hath larger leaves, which are of an oblong heart-ſhape. The flowers are rather larger than thoſe of the firſt, and ſtand upon ſhorter foot-ſtalks; theſe differences hold in the plants which are raiſed from ſeeds, therefore I think they may be allowed to ſtand as diſtinct ſpecies, though there is a great likeneſs at firſt ſight in them.

The leaves of theſe ſhrubs, when fermented in a vat, in the ſame manner as is practiſed with the Indigo plants, will afford a dye, very near to that of Indigo; but whether it will anſwer the ſame purpoſes is not yet certain, or whether it may be worth cultivating for that purpoſe, either here or abroad, is what we cannot yet determine; but there is ſo great affinity between theſe plants, and thoſe of the Indigo in their generical characters, that Dr. Tournefort, and ſeveral other botaniſts, have ranged them in the ſame genus.

Theſe ſhrubs are eaſily propagated by ſowing their ſeeds (which they commonly produce in great plenty) in March, upon a bed of light ſandy earth, obſerving to keep the bed clear from weeds; and in very dry weather the bed muſt often be refreſhed with water, which ſhould be given carefully, leſt the ſeeds ſhould be waſhed out of the ground by haſty watering. When the plants are come up, they muſt be kept clean from weeds, and in very dry weather, if they are watered, it will promote their growth; the Michaelmas following (if the plants have thriven well) you may draw out the largeſt, which may be tranſplanted into a nurſery, at three feet diſtance row from row, and one foot aſunder in the rows. This will give room to thoſe plants which are left to grow in the ſeed-bed, in which place they may remain another year, when they will alſo be fit to tranſplant into a nurſery, where they ſhould be two years, when they will be fit to plant out, where they are to remain for good; in doing of which, you ſhould be careful in taking them up, not to break or wound the roots, nor ſhould they remain too long in the nurſery before they are tranſplanted, for they are ſubject to ſhoot downright roots, which, when cut off, oftentimes proves the death of the tree. In all other reſpects it muſt be treated like other flowering ſhrubs, among which this is commonly ſold at the nurſeries. It may alſo be propagated by laying down the tender branches, which will take root in about a year's time, and may then be tranſplanted into a nurſery, and managed in the ſame manner as the ſeedling plants.

The third ſort grows naturally in the Weſt-Indies, where Plumier firſt diſcovered it in the French ſettlements; but it was found growing in plenty at La Vera Cruz, in New Spain, by the late Dr. Houſtoun, who ſent me the ſeeds, which ſucceeded in the Chelſea garden, where the plants flowered, but did not perfect their ſeeds, and the plants being annual, the ſpecies was loſt here. This riſes with a round herbaceous ſtalk three feet high, which is garniſhed at each joint with one long winged leaf, compoſed of about twenty pair of lobes, terminated by an odd one; theſe have obtuſe points, and are of a deep green. The flowers come out ſingly from the ſide of the ſtalk, immediately above the foot-ſtalk of the leaves, ſtanding upon ſlender foot-ſtalks two inches long; they are larger than thoſe of either of the former ſorts, and are of a pale yellow colour; theſe are ſucceeded by ſlender compreſſed pods, which are more than ſix inches long, having a border on each ſide, and a ſwelling where each ſeed is lodged.

This is an annual plant, whoſe ſeeds muſt be ſown upon a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted into a ſeparate ſmall pot filled with light kitchen-garden earth, and plunged into a moderate hot-bed of tanners bark, ſhading them from the ſun until they have taken new root, then they muſt be treated in the ſame manner as other exotic plants from thoſe warm countries. If theſe plants are brought forward in the ſpring, and kept under a deep frame in a tan-bed, or plunged into the bark-bed in the ſtove, when they are grown too tall to remain under common frames, they will ripen ſeeds in England; for thoſe ſeeds which I received did not arrive here till May, and yet thoſe plants flowered well in Auguſt; but the autumn coming on ſoon after, prevented their perfecting ſeeds, and that part of the ſeed which I reſerved till the next year did not grow.

EMPETRUM. Lin. Gen. Plant. 977. Tourn. Inſt. R. H. 579. tab. 421. [Ἔμπετρον, of ἐν, in, and πέτρα, *Gr.* a rock or ſtone, becauſe this tree grows in ſtony places.] Black-berried Heath.

The CHARACTERS are,

It hath male and female flowers on different plants; the male flowers have a three-pointed empalement, which is permanent; they have three oblong petals, which are narrow at their baſe, and three long hanging ſtamina which

are hairy, terminated by ſhort two-pointed ſummits, which ſtand erect. The female flowers have the ſame empalement and petals as the male, but no ſtamina. In the center is ſituated a depreſſed germen, ſupporting nine reflexed ſpreading ſtigma. The germen afterward becomes a depreſſed round berry of one cell, incloſing nine ſeeds placed circularly.

This genus of plants is ranged in the third ſection of Linnæus's twenty-ſecond claſs, which includes thoſe plants whoſe male and female flowers grow on ſeparate plants, and the male flowers have three ſtamina.

We have but one SPECIES of this genus in England, viz.

EMPETRUM (*Nigrum*) procumbens. Hort. Cliff. 470. *Trailing Berry-bearing Heath.* Empetrum montanum, fructu nigro. Tourn. Inſt. 579. *Black-berried Heath, Crow berries, Crake berries.*

This little ſhrub grows wild upon the mountains of Staffordſhire, Derbyſhire, and Yorkſhire, and is ſeldom propagated in gardens unleſs for variety ſake; but it may be cultivated in ſhady places, and will thrive very well in gardens, where the ſoil is ſtiff. The plants ſhould be procured from the places where they grow naturally, for the ſeeds remain a year in the ground before they vegetate, and afterward are very ſlow in their growth, ſo they are not worth the trouble of cultivating from ſeeds. If the plants are planted on a moiſt boggy ſoil in autumn, they will get roots in the winter, and will require no farther care than to clear them from weeds, provided they have a moiſt ſoil, otherwiſe they will require to be frequently watered; for theſe low ſhrubs commonly grow upon the tops of wild mountains, where the ſoil is generally peaty, and full of bogs. The heath cocks feed much upon the berries of this plant; ſo that wherever there is plenty of theſe low ſhrubs, there are commonly many of theſe fowls to be found.

EMUSCATION, the clearing a tree of moſs, *Lat.*

ENUCLEATION, a taking out the nut or kernel of any fruit, *Lat.*

ENULA CAMPANA. See INULA.

EPHEDRA. Lin. Gen. Plant. 1007. Tourn. Inſt. 663. tab. 477. Shrubby Horſe-Tail, vulgò.

The CHARACTERS are,

It hath male and female flowers in different plants; the male flowers are collected in katkins, which are ſcaly; under each ſcale is a ſingle flower; theſe have no petals, but ſeven ſtamina, which are joined in form of a column, and are terminated by roundiſh ſummits. The female flowers have an oval perianthium, compoſed of five ſeries of leaves, which alternately lie over the diviſions of the lower range; theſe have no petals, but have two oval germen ſitting upon the perianthium, ſupporting ſhort ſtyles, crowned by ſingle ſtigma. The germen afterward turn to oval berries, each having two ſeeds.

This genus of plants is ranged in the twelfth ſection of Linnæus's twenty-ſecond claſs, intitled Diœcia Monadelphia, the plants of this claſs and ſection having male flowers on different plants from the female, and their ſtamina join in form of a column.

We have but one SPECIES of this genus in England, viz.

EPHEDRA (*Diſtachia*) pedunculis oppoſitis, amentis geminis. Hort. Cliff. 465. *Shrubby Horſe-Tail with oppoſite foot-ſtalks, and twin katkins.* Ephedra maritima minor. Tourn. *Leſſer Sea Horſe-Tail.*

This is a low ſhrubby plant, which grows naturally upon the rocks by the ſea in the ſouth of France, in Spain, and Italy; it is alſo preſerved in ſeveral gardens for the ſake of variety, but has little beauty. This hath a low ſhrubby ſtalk, which puts out a few ſhort branches, riſing about two feet high, which have many protuberant joints, at which come out ſeveral narrow ruſhy leaves, like thoſe of the Horſe-Tail, which continue green all the year, but the plants rarely flower in this country.

It may be propagated by offſets, which the plants ſend forth in great plenty; for the roots creep under ground, and ſend forth ſuckers, which may be taken off to tranſplant in the ſpring. They love a pretty moiſt ſtrong ſoil, and will endure the cold of our ordinary winters very well in the open air. Some of theſe plants were formerly preſerved in pots, and were houſed in winter, but by later experience they are found to thrive better in the full ground.

EPHEMERUM. See TRADESCANTIA.

EPIDENDRUM. Lin. Gen. 1016. Vanilla.

There are near thirty ſpecies of this genus, which grow naturally upon trees in Africa and both Indies; but as the plants cannot, by any art yet known, be cultivated in the ground, it would be to little purpoſe the enumerating of them here; though could the plants be brought to thrive by culture, many of them produce very fine flowers of uncommon forms. I had three ſpecies of them ſent me from America, which were ſtripped from the trees on which they grew; theſe I planted with care in pots, which were placed in a ſtove, where they came ſo far as to ſhew their flowers, but the plants ſoon after periſhed.

EPIGÆA. Lin. Gen. Plant. 486. Memecylum. Mitch. 13. Trailing Arbutus.

The CHARACTERS are,

The flower hath a double empalement, which is permanent; the outer is compoſed of three, and the inner of one leaf, divided at the top into five parts. The flower is of the ſalver ſhape, with one petal, having a cylindrical tube, which is longer than the empalement, and hairy within. The brim is cut into five parts, which ſpread open. It hath ten ſlender ſtamina the length of the tube, which are fixed to the baſe of the petal, and are terminated by oblong ſummits. In the center is ſituated a globular hairy germen, crowned by an obtuſe quinquefid ſtigma. The germen afterward becomes a depreſſed, half globular, five-cornered fruit, having five cells, opening with five valves, containing ſeveral ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's tenth claſs, intitled Decandria Monogynia, the flowers having ten ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

EPIGÆA. Lin. Gen. Plant. 486. Trailing Arbutus.

This plant grows naturally in North America, from whence it has been introduced to the Engliſh gardens. It is a low plant, with a trailing ſhrubby ſtalk, which puts out roots at the joints, and when in a proper ſoil and ſituation, multiplies very faſt. The ſtalks are garniſhed with oblong rough leaves which are waved on their edges. The flowers are produced at the end of theſe branches in looſe bunches; theſe are white, and divided at the top into five acute ſegments, which ſpread open in form of a ſtar. It flowers in July, but doth not produce fruit in England.

The plants are eaſily propagated by their trailing ſtalks, which put out roots at the joints, ſo may be cut off from the old plant, and placed in a ſhady ſituation and a moiſt ſoil: the beſt time for this is in autumn, that the plants may be well rooted before the ſpring. If the winter ſhould prove very ſevere, it will be proper to lay a few dried leaves, or ſome ſuch light covering over them, which will prevent their being injured by froſt; and after they are well rooted, they will require no farther care but to keep them clean from weeds.

EPILOBIUM. Lin. Gen. Plant. 426. Chamænerion. Tourn. R. H. 302. tab. 157. Willow Herb, or French Willow.

The CHARACTERS are,

The empalement of the flower is compoſed of four oblong pointed leaves, which are coloured. The flower hath four bordered petals which ſpread open, and eight ſtamina which are alternately ſhorter, terminated by oval compreſſed ſummits. Below the flower is ſituated a long cylindrical germen, ſupporting a ſlender ſtyle, crowned by an obtuſe quadrifid ſtigma. The germen afterward becomes a long, cylindrical, furrowed capſule with five cells, filled with oblong ſeeds, crowned with down.

This genus of plants is ranged in the firſt ſection of Linnæus's eighth claſs, intitled Octandria Monogynia, the flower having eight ſtamina and one ſtyle.

The SPECIES are,

1. EPILOBIUM (*Anguſtifolium*) foliis ſparſis lineari-lanceolatis, floribus inæqualibus. Lin. Sp. 493. *Epilobium with linear ſpear-ſhaped leaves which are placed thinly, and unequal flowers.* Chamænerion latifolium vulgare. Tourn. Inſt. R. H. 302. *Common broad-leaved Willow Herb, or French Willow.*
2. EPILOBIUM (*Hirſutum*) foliis oppoſitis lanceolatis ſerratis decurrenti-amplexicaulibus. Lin. Hort. Cliff. 145. *Epilobium with oppoſite ſpear-ſhaped leaves, which are ſawed on their edges.* Chamænerion villoſum, magno flore purpureo. Tourn. Inſt. R. H. 303. *Hoary Willow Herb with a large flower, commonly called Codlins and Cream.*

There are ſeveral other ſpecies of this genus, ſome of which grow naturally in ſhady woods and moiſt places in moſt parts of England, where they are often very troubleſome weeds, therefore are ſeldom admitted into gardens, ſo I ſhall not trouble the reader with their diſtinctions.

The firſt ſort here mentioned was formerly planted in gardens for the beauty of its flowers; but as it uſually ſpreads far by the creeping roots, whereby it over-runs all the neighbouring plants, it has been generally caſt out of moſt gardens: however, in ſome low moiſt places, or in great ſhade, if there was a place aſſigned for this plant, it will make a good appearance when it is in flower, and theſe flowers are very proper to cut for baſons to adorn chimnies in the ſummer ſeaſon. This uſually grows about four feet high, with ſlender ſtiff branches, which are beſet with leaves, reſembling thoſe of the Willow, from whence it had the name of Willow Herb, or French Willow. On the upper part of the ſtalks the flowers are produced in a long ſpike or thyrſe, which are of a fine Peach colour, and, if the ſeaſon is not very hot, they will continue near a month in beauty. This ſort is found growing wild in divers parts of England, but ſeveral botaniſts have ſuppoſed it was only found in ſuch places where the plants had been caſt out of gardens; however, I think it muſt be allowed to be a native of this country, ſince it is found in great plenty in woods at a great diſtance from any habitation, particularly in Charlton foreſt, and ſeveral other woods in Suſſex. It is a great creeper at the root, ſo may be eaſily propagated.

There is a variety of this with white flowers, which is planted in gardens, but differs from it only in the colour of the flower; however, ſome perſons are fond of propagating theſe varieties, for which reaſon I mentioned it here.

The ſecond ſort is found wild by the ſide of ditches and rivers in many parts of England. This plant grows about three feet high, and produces its flowers on the top of the ſtalks; but theſe are much leſs beautiful than thoſe of the firſt, and the plant being a great rambler at the root, is ſeldom admitted into gardens. The leaves of this plant being rubbed, emit a ſcent like ſcalded Apples, from whence ſome have given the name of Codlins and Cream to this plant.

EPIMEDIUM. Lin. Sp. Plant. 138. Tourn. Inſt. R. H. 232. tab. 117. Raii Meth. Plant. 129. Barrenwort.

The CHARACTERS are,

The flower hath a three-leaved empalement which falls off. It hath four obtuſe oval fruit, which are concave, and ſpread open, and four nectariums which are cup-ſhaped, obtuſe at the bottom, and as large as the petals. It hath four ſtamina, terminated by oblong, erect, bilocular ſummits. The oblong germen is ſituated at the bottom, ſupporting a ſhort ſtyle, crowned by a ſingle ſtigma. The germen afterward becomes an oblong pointed pod, with one cell, opening with two valves, incloſing many oblong ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's fourth claſs, intitled Tetrandria Monogynia, the flower having four ſtamina and one ſtyle.

We know but one SPECIES of this genus, viz.

1. EPIMEDIUM (*Alpinum.*) Hort. Cliff. 37. *Alpine Barrenwort.*

This plant hath a creeping root, from which ariſe many ſtalks about nine inches high, divided at the top into three, each of which is again divided into three ſmaller; upon each of theſe ſtands a ſtiff heart-ſhaped leaf, ending in a point, of a pale green on the upper ſide, but gray on the under. A little below the firſt diviſion of the ſtalk comes out the foot-ſtalk of the flowers, which is near ſix inches long, dividing into ſmaller, each of theſe ſuſtaining three flowers; theſe are compoſed of four leaves, placed in form of a croſs; they are of a reddiſh colour, with yellow ſtripes on the border. In the center of the flower ariſes the ſtyle, ſituated upon the germen, which afterward turns to a ſlender pod, containing many oblong ſeeds. It flowers in May, and the leaves decay in autumn. The roots, if planted in a ſhady border, ſhould be every year reduced, ſo as to keep them within bounds, otherwiſe it will ſpread its roots and interfere with the neighbouring plants. It grows naturally on the Alps, but I received ſome plants of it which were found growing naturally in a wood in the North of England.

EPIPHYLLOSPERMOUS PLANTS [of ἐπὶ, upon, Φύλλον, a leaf, and Σπέρμα, *Gr.* ſeed,] ſuch plants as bear their ſeeds on the back of their leaves, the ſame as capillaries.

EQUINOCTIAL, ÆQUINOCTIAL [of equus, equal, and nox, *Lat.* night.] A great and immoveable circle of the ſphere, under which the equator moves in its diurnal motion.

The equinoctial, or equinoctial line, is ordinarily confounded with the equator; but there is a difference, the equator being moveable, and the equinoctial unmoveable, and the equator drawn about the convex ſurface of the ſphere, but the equinoctial on the concave ſurface of the Magnus Orbis.

The equinoctial is conceived, by ſuppoſing a ſemidiameter of the ſphere, produced through a point of the equator, and there deſcribing a circle on the immoveable ſurface of the Primum Mobile, by the rotation of the ſphere about its axis.

Whenever the ſun comes to this circle, in his progreſs through the ecliptic, it makes equal day and night all round the globe; as then ariſing due eaſt, and ſetting due weſt, which he never does at any other times of the year.

The people who live under this circle, have their days and nights conſtantly equal; and the ſun is in their zenith at noon, and caſts no ſhadow.

EQUINOXES are the times when the ſun enters into the equinoctial points, which are the two points where the equator and ecliptic interſect each other; the one being in the firſt point of Aries, called the vernal equinox; and the other in the firſt point of Libra, called the autumnal equinox.

So the equinoxes happen when the ſun is in the equinoctial circle, when, of conſequence, the days are equal to the nights throughout the world, which is the caſe twice a year, viz. about the 21ſt of March, and the 22d of September; the firſt of which is the vernal, and the ſecond the autumnal equinox.

EQUISETUM [of equus, a horſe, and ſeta, a briſtle, becauſe the leaves and branches repreſent the briſtles or hair of a horſe's main or tail. It is by the Greeks called Ἵππερις, of Ἵππος, a horſe, and Οὐρὰ, a tail; and hippoſeta, of ἵππος and ſeta.] Horſe-Tail.

There are ſeveral ſpecies of this plant, which are found in England, on the ſides of ditches, or in ſhady woods; but as they are plants which are never cultivated in gardens, I ſhall paſs them over in this place.

ERANTHEMUM. See ADONIS.

ERICA. Lin. Gen. Plant. 435. Tourn. Inſt. R. H. 602. tab. 373. [Ἐρείκη, of ἐρείκω, or ἐρίκω, *Gr.* to break, becauſe this plant is ſaid to have the virtue of breaking the ſtone in the bladder.] Heath; in French, *Bruyere.*

The CHARACTERS are,

The flower hath a coloured permanent empalement of four oval

oval erect leaves. It hath one ſwelling petal, which is erect and quadrifid, and eight hairy ſtamina, which are fixed to the receptacle, and terminated by bifid ſummits. In the bottom is ſituated the roundiſh germen, ſupporting a declining ſtyle, which is longer than the ſtamina, crowned by a four-cornered ſtigma. The germen afterward becomes a round capſule, having four cells, which are filled with ſmall ſeeds.

This genus of plants is ranged in the firſt ſection of Linnæus's eighth claſs, intitled Octandria Monogynia, the flower having eight ſtamina and one ſtyle.

The SPECIES are,

1. ERICA (*Vulgaris*) antheris bicornibus incluſis, corollis inæqualibus, campanulatis mediocribus foliis oppoſitis ſagittatis. Lin. Sp. Plant. 352. *Heath with two horns including the ſummits, bell-ſhaped unequal petals, and middling arrow-pointed leaves placed oppoſite.* Erica vulgaris glabra. C. B. 485. *Common ſmooth Heath.*
2. ERICA (*Herbacea*) antheris bicornibus incluſis campanulatis mediocribus ſecundis, foliis ternis triquetris patulis. Lin. Sp. Plant. 500. *Heath with a horned ſummit, a bell-ſhaped petal, and five narrow ſpreading leaves.* Erica foliis coridis, multiflora. J. B. vol. 1. p. 356. *Pine-leaved Heath with many flowers.*
3. ERICA (*Cinerea*) antheris bicornibus incluſis, corollis ovatis racemoſis, foliis ternis glabris linearibus. Lin. Sp. Plant. 352. *Heath with two horns including the ſummits, oval branchy petals, and three long, narrow, ſmooth leaves.* Erica humilis, cortice cinereo, arbuti flore. C. B. P. 486. *Dwarf Heath with an Aſh-coloured bark, and Strawberry-tree flower.*
4. ERICA (*Ciliaria*) antheris ſimplicibus incluſis, corollis ovatis irregularibus, floribus ternoracemoſis, foliis ternis ciliatis. Lœfl. Epiſt. 2. p. 9. Lin. Sp. Plant. 354. *Heath with ſingle ſummits, oval irregular petals, triple branching flowers, and hairy leaves placed by threes.*
5. ERICA (*Arborea*) antheris bicornibus incluſis, corollis campanulatis longioribus, foliis quaternis patentiſſimis, caule ſubarboreo tomentoſo. Lin. Sp. 502. *Tree Heath, whoſe antheræ are included in two horns, a longer bell-ſhaped flower, and four ſpreading leaves at each joint.*

The four firſt ſorts grow wild upon barren uncultivated places in divers parts of England; but notwithſtanding their commonneſs, yet they deſerve a place in ſmall quarters of humble flowering ſhrubs, where, by the beauty and long continuance of their flowers, together with the diverſity of their leaves, they make an agreeable variety.

Theſe are ſeldom propagated in gardens, and ſo not to be had from the nurſeries, but may be taken up, with a ball of earth to their roots, from the natural place of their growth in autumn, and may be tranſplanted into the garden. The ſoil where they are planted ſhould not be dunged, nor ſhould you beſtow any other culture on them than clearing them from weeds; for the leſs the ground is dug, the better theſe will thrive, for they commonly ſhoot their roots near the ſurface, which, in digging, are ſubject to be hurt, whereby the plant is often deſtroyed; theſe may alſo be propagated by ſeeds, but this being a tedious method, the other is much preferable to it.

The fifth ſort grows naturally at the Cape of Good Hope, and alſo in great plenty in Portugal, where it riſes with a ſtrong ligneous ſtem to the height of eight or ten feet, ſending out many branches the whole length, garniſhed with narrow leaves, four coming out from the ſame point; the flowers are produced between the leaves on the upper part of the branches; they are white, with a bluſh of red on their outſide; theſe appear in May, but are not ſucceeded by ſeeds in England.

This plant will live in the open air in England, provided it is planted in a dry ſoil and a warm ſituation, but is generally kept in pots and houſed in winter; however, the plants ſo managed, do not thrive or flower ſo well as thoſe in the full ground, therefore it is much better to be at the trouble of ſheltering the plants in the ground in winter, than to keep them in pots.

It is with difficulty propagated here, which is done by laying down the young ſhoots, though theſe are often two years before they put out roots: others plant the young ſlips or cuttings into pots filled with light earth, covering them cloſe with a bell-glaſs, and ſhading them from the ſun; where this is ſkilfully practiſed, the cuttings will put out roots, and make better plants than the layers.

ERICA BACCIFERA. See EMPETRUM.

ERIGERON. Lin. Gen. Plant. 855. Senecionis. Sp. Dill. Conyzella. Dill. Groundſel.

The CHARACTERS are,

It hath a compound radiated flower, compoſed of many hermaphrodite florets which form the diſk, and female half florets which make the rays; theſe are contained in one oblong ſcaly empalement. The hermaphrodite florets are funnel-ſhaped, and cut at the top into five parts; theſe have five ſhort hairy ſtamina, terminated by cylindrical ſummits; they have a ſmall germen, crowned with down, which is longer than the petal. Upon the germen ſits a ſlender ſtyle the length of the down, crowned by two oblong ſtigmas; the germen afterward becomes a ſmall oblong ſeed, crowned with long down. The female half florets, which compoſe the rays, have one ſide of their petals ſtretched out like a tongue; theſe have no ſtamina, but a ſmall downy germen, ſupporting a ſlender ſtyle, which is hairy, crowned by two ſlender ſtigmas. The germen afterward becomes a ſeed like the hermaphrodite florets.

This genus of plants is ranged in the ſecond ſection of Linnæus's nineteenth claſs, which includes the plants with a compound flower, compoſed of hermaphrodite and female flowers, which are both fruitful. To this genus Dr. Linnæus has added ſeveral ſpecies of Conyza and After of former botaniſts.

The SPECIES are,

1. ERIGERON (*Viſcoſum*) pedunculis unifloris lateralibus foliis lanceolatis denticulatis calycibus ſquarroſis, corollis radiatis. Hort. Upſal. 258. *Groundſel with one flower on a foot-ſtalk, proceeding from the ſide of the ſtalk, ſpear-ſhaped leaves, and a rough empalement.* Conyza mas Theophraſti, major Dioſcoridis. C. B. P. 265. *Male Fleabane of Theophraſtus, and greater Fleabane of Dioſcorides.*
2. ERIGERON (*Acre*) pedunculis alternis unifloris. Hort. Cliff. 407. *Groundſel with alternate foot-ſtalks having one flower.* Conyza cærulea acris. C. B. P. 265. *Blue acrid Fleabane.*
3. ERIGERON (*Bonarienſe*) foliis baſi revolutis. Lin. Sp. Plant. 863. *Groundſel whoſe leaves are curved at their baſe.* Senecio Bonarienſis purpuraſcens, foliis imis coronopi. Hort. Elth. 344. tab. 257. *Purpliſh Groundſel of Buenos Ayres, with under leaves like Hartſhorn Plantain.*
4. ERIGERON (*Canadenſe*) caule floribuſque paniculatis. Hort. Cliff. 407. *Groundſel with a paniculated ſtalk and flowers.* Virga aurea Virginiana annua. Zan. Hiſt. 205. *Annual Virginia Golden Rod.*
5. ERIGERON (*Alpinum*) caule ſubbifloro, calyce ſubhirſuto. Lin. Sp. Plant. 864. *Groundſel with two flowers on a ſtalk, and hairy empalements.* Conyza cærulea Alpina. C. B. P. 265. *Blue Alpine Fleabane.*
6. ERIGERON (*Graveolens*) ramis lateralibus multifloris, foliis lanceolatis integerrimis, calycibus ſquarroſis. Amœn. Acad. 4. p. 290. *Groundſel with many flowers on the ſide of the ſtalks, entire ſpear-ſhaped leaves, and rough empalements.* Virga aurea minor, foliis glutinoſis & graveolentibus.
7. ERIGERON (*Fœtidum*) foliis lanceolato-linearibus retuſis, floribus corymboſis. Lin. Sp. 1213. *Groundſel with linear ſpear-ſhaped leaves, and flowers in a corymbus.* Senecio Africanus folio retuſo. Herm. 661.

The firſt ſort grows naturally in the ſouth of France, and in Italy. This hath a perennial root, from which ariſe ſeveral upright ſtalks near three feet high, garniſhed with oblong oval leaves which are hairy, and ſit cloſe to the ſtalk; they are placed alternate, and are four inches long, and two broad in the middle; theſe in warm weather ſweat out a clammy juice. The flowers are produced ſingle upon pretty long foot-ſtalks, ſome ariſing from the ſide of the ſtalk, and

others terminate it; they are yellow, and have an agreeable odour. They flower in July, and the ſeeds ripen in autumn.

This plant is propagated by ſeeds, which, if ſown in autumn, will more certainly ſucceed than thoſe which are ſown in the ſpring. When the plants come up, they ſhould be thinned if they are too cloſe, and kept clean from weeds till autumn, when they ſhould be tranſplanted where they are to remain. They delight in a dry ſoil and a ſunny expoſure. The ſecond year the plants will flower and perfect their ſeeds, but the roots will continue ſeveral years, and annually produce their flowers and ſeeds.

The next four ſorts are preſerved in botanic gardens for the ſake of variety, but are ſeldom admitted into gardens for pleaſure. The fifth ſort is a perennial plant, which grows naturally on the Alps, and may be propagated by ſeeds in the ſame manner as the firſt ſort, but ſhould have a ſhady ſituation and a moiſt ſoil.

The others are annnual plants, which, if once admitted into a garden, and ſuffered to ſcatter their ſeeds, will become very troubleſome weeds there.

The ſixth ſort riſes with ſtiff ſtalks three feet high, garniſhed with narrow ſpear-ſhaped leaves; the flowers are yellow, and are produced in cloſe bunches from the ſide of the ſtalk toward the top; theſe appear in July, and in warm ſeaſons are ſucceeded by ſeeds in England.

It may be propagated by cutting the ſtalk in proper lengths, which, if planted in a ſhady border, and duly watered, will put out roots; and the following autumn, theſe may be taken up and planted in the borders of the flower-garden.

The ſeventh ſort grows naturally in Africa: the roots of this ſend up five or ſix upright ſtalks near four feet high, cloſely garniſhed with linear ſpear-ſhaped leaves which are hairy; the ſtalks are terminated by pretty large bunches of yellow flowers, formed in a corymbus. Theſe appear in October, and frequently continue more than two months, which renders the plant more valuable.

This is too tender to thrive in the open air in this country, ſo the plants ſhould be kept in pots; and if in the winter they are placed in a common frame, where they may have a large ſhare of free air in mild weather, and ſcreened from hard froſts, they will thrive better than with tender treatment. It is eaſily propagated by cuttings, which, if planted in May, will readily put out roots, and the young plants will flower the autumn following.

ERINUS. Lin. Gen. Plant. 689. Ageratum. Tourn. Inſt. R. H. 651. tab. 422.

The CHARACTERS are,

The flower hath a permanent empalement, compoſed of five leaves, which are equal; it hath one petal which is tubulous, and of the ringent kind, cut into five equal ſegments, which ſpread open, three ſtanding upward from the upper lip, and two turn downward. It hath four ſtamina ſituated within the tube, two of which are a little longer than the other, terminated by ſmall ſummits. In the bottom of the tube is ſituated the oval germen, ſupporting a ſhort ſtyle, crowned by a head-ſhaped ſtigma. The germen afterward becomes an oval capſule, covered by the empalement, having two cells filled with ſmall ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fourteenth claſs, which includes thoſe plants whoſe flowers have two long and two ſhort ſtamina, and their ſeeds growing in a capſule. Tournefort has it in his appendix, but it ſhould be placed in his third claſs, and the fifth ſection, which contains the plants with an anomalous tubulous flower of one leaf.

The SPECIES are,

1. ERINUS (*Alpinus*) floribus racemoſis. Lin. Sp. Plant. 630. *Erinus with branching flowers.* Ageratum ſerratum, Alpinum, glabrum, flore purpuraſcente. Tourn. R. H. 651. *Smooth ſawed Alpine Ageratum, having a purpliſh flower.*
2. ERINUS (*Tomentoſus*) tomentoſus, caulibus procumbentibus, floribus ſeſſilibus axillaribus. *Woolly Erinus with trailing ſtalks, and flowers ſitting cloſe to their ſides.* Ageratum Americanum procumbens, gnaphalii facie, floribus ad foliorum nodos. Houſt. MSS. *Trailing American Ageratum with the appearance of Cudweed, and flowers growing at the knots of the leaves.*
3. ERINUS (*Americanus*) caule erecto, foliis lanceolatis oppoſitis, floribus laxè ſpicatis terminalibus. *Erinus with an upright ſtalk, ſpear-ſhaped leaves placed oppoſite, and flowers growing in looſe ſpikes, terminating the ſtalks.* Ageratum Americanum erectum ſpicatum, flore purpureo. Houſt. MSS. *Upright American Ageratum with ſpikes of purple flowers.*
4. ERINUS (*Fruteſcens*) caule erecto fruticoſo, foliis ovato-lanceolatis ſerratis, alternis, floribus axillaribus. *Erinus with a ſhrubby erect ſtalk, oval, ſpear-ſhaped, ſawed leaves placed alternate, and flowers on the ſides of the ſtalk.* Ageratum fruteſcens, foliis dentatis latioribus, villoſum. Houſt. MSS. *Shrubby hoary American Ageratum with broad indented leaves.*
5. ERINUS (*Verticillatus*) caule ramoſo procumbente, foliis ovatis ſerratis glabris oppoſitis, floribus verticillatis. *Erinus with a branching trailing ſtalk, oval, ſmooth, ſawed leaves placed oppoſite, and flowers growing in whorls round the ſtalks.* Ageratum Americanum procumbens, foliis ſubrotundis ſerratis glabris. Houſt. MSS. *Trailing American Ageratum with roundiſh, ſmooth, ſawed leaves.*
6. ERINUS (*Procumbens*) caulibus procumbentibus, foliis ovatis glabris, floribus ſingulis alaribus, pedunculis longioribus. *Erinus with trailing ſtalks, oval ſmooth leaves, and ſingle flowers on the ſides of the ſtalks, having longer foot-ſtalks.* Ageratum Americanum, procumbens, glabrum, floribus luteis, longis pediculis inſidentibus. Houſt. MSS. *Smooth trailing American Ageratum, with yellow flowers ſitting upon long foot-ſtalks.*

The firſt ſort grows naturally upon the Alps and Helvetian mountains: this is a very low plant, whoſe leaves lie cloſe to the ground, growing in cloſe tufts; they are about half an inch long, and one eighth of an inch broad, ſawed on their edges, and of a dark green; between theſe ariſes the flower-ſtalk, which is ſcarce two inches high, ſupporting a looſe bunch of purple flowers, which ſtand erect. Theſe appear in May, and ſometimes are ſucceeded by ripe ſeeds in July.

It is propagated by parting the roots; the beſt time for this is in autumn; they muſt have a ſhady ſituation and a loamy ſoil without dung, for in rich earth theſe plants are very ſubject to rot.

The ſecond ſort was ſent me by the late Dr. Houſtoun from La Vera Cruz, where he found it growing naturally. This ſends out ſeveral trailing ſtalks about ſix inches long, which are cloſely garniſhed with ſmall oval leaves, placed on every ſide; they are very white and woolly, and at the joints juſt above the leaves come out the flowers, ſitting very cloſe to the ſtalks; theſe are white, and are ſucceeded by round capſules, having two cells, filled with ſmall ſeeds: this plant has great reſemblance at a diſtance to the Sea Cudweed.

The third ſort was diſcovered by Dr. Houſtoun, in the ſame country with the former: this hath an upright ſtalk two feet high, garniſhed with ſpear-ſhaped leaves placed oppoſite; and toward the top of the ſtalk is produced two ſmaller branches placed oppoſite, which ſtand erect; and theſe, as alſo the middle ſtalk, are terminated by looſe ſpikes of purple flowers, which are ſucceeded by oval ſeed-veſſels, filled with ſmall ſeeds.

The fourth ſort riſes with a ſhrubby ſtalk about four feet high, dividing into ſeveral ſmall branches, which are hairy; theſe are garniſhed with oval ſpear-ſhaped leaves, deeply ſawed on their edges; they are placed alternate, and have pretty long foot-ſtalks. The flowers come out from the ſide of the ſtalks, ſometimes ſingle, at other times two or three at a joint, ſitting cloſe to the ſtalks; they are white, and are ſucceeded by round ſeed-veſſels, filled with ſmall ſeeds.

The

The fifth ſort ſends out many trailing ſmooth ſtalks, which branch out very much on every ſide; they grow about ſeven or eight inches long, and are garniſhed with ſmall oval leaves placed oppoſite. The flowers come out in whorls, ſitting very cloſe to the ſtalks; they are white, and make but little appearance; theſe are ſucceeded by round capſules, filled with ſmall ſeeds.

The ſixth ſort ſends out ſeveral trailing ſtalks about ſix inches long, which divide into many ſmaller branches; theſe are garniſhed with ſmall oval leaves, ſtanding oppoſite. The flowers come out ſingly from the ſide of the ſtalk; they are of a bright yellow, and ſtand on long ſlender foot-ſtalks; theſe are ſucceeded by oval ſeed-veſſels, filled with ſmall ſeeds.

The fourth ſort is a perennial ſhrubby plant, which will continue ſeveral years, if kept in a warm ſtove; but the ſecond, third, fifth, and ſixth ſorts are annual, decaying ſoon after they have perfected their ſeeds.

Theſe are propagated by ſeeds, which ſhould be ſown in pots filled with light earth, and plunged into a moderate hot-bed, where ſometimes the plants will come up in five or ſix weeks, and at other times the ſeeds do not vegetate till the following ſpring; this happens frequently when the ſeeds have been kept long after they were gathered. When the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot filled with light earth, not too rich with dung, and then plunged into a hot-bed of tanners bark. When they have taken new root, they ſhould be treated in the ſame way as other plants from thoſe countries, by admitting proper air to them at all times when the weather is warm, and frequently refreſhing them with water: with this management the annual ſorts will flower in July and Auguſt, and frequently ripen their ſeeds in autumn, if the plants are brought forward early in the ſpring, otherwiſe the winter will come on before their ſeeds ripen.

The ſhrubby kind muſt be placed in the bark-ſtove in autumn, and during the winter the plants ſhould be frequently refreſhed with water, but it muſt not be given them in large quantities, nor too often repeated in cold weather, for moiſture will then deſtroy them; the ſecond year the plants will flower and perfect their ſeeds.

ERIOCEPHALUS. Dill. Hort. Elth. 110. Lin. Gen. Plant. 890.

The CHARACTERS are,

It hath a radiated flower, compoſed of female half florets which form the rays, and hermaphrodite florets, which form the diſk; theſe are included in one common ſcaly empalement. The hermaphrodite florets are funnel-ſhaped, and cut into five parts at the brim, which ſpread open; theſe have five ſhort hairy ſtamina, terminated by cylindrical ſummits; they have a ſmall naked germen, ſupporting a ſingle ſtyle, crowned by a pointed ſtigma; theſe are barren. The female florets have their petals ſtretched out on one ſide like a tongue, which is divided at the end into three ſmall lobes; theſe have no ſtamina, but an oval naked germen, with a ſingle ſtyle, crowned by an inflexed ſtigma; theſe have one naked ſeed, ſitting on the naked plain receptacle.

This genus of plants is ranged in the fourth ſection of Linnæus's nineteenth claſs, which includes thoſe plants with compound flowers, whoſe hermaphrodite florets are barren, and the female half florets are fruitful.

We know but one SPECIES of this genus, viz.

ERIOCEPHALUS (*Africanus.*) Lin. Sp. Plant. 926. We have no proper title for this in Engliſh. Eriocephalus ſempervirens, foliis faſciculatis & digitatis. Hort. Elth. 132. *Evergreen Eriocephalus with fingered leaves growing in bunches.*

This plant hath a ſhrubby ſtalk, which riſes from four to ſix feet high, putting out many ſide branches the whole length, cloſely garniſhed with woolly leaves, which come out in cluſters; ſome of theſe are taper and entire, others are divided into three or five parts, which ſpread open like a hand; they have a ſtrong ſmell when bruiſed, approaching to that of Lavender Cotton, but not quite ſo rank. The flowers are produced in ſmall cluſters at the extremity of the branches, ſtanding erect; they are tubulous. The female florets which compoſe the rays, form a hollow, in the middle of which the hermaphrodite flowers are ſituated which form the diſk. The border is white, with a little reddiſh caſt on the inſide, and the diſk is of a purpliſh colour. The flowers appear in autumn, but are not ſucceeded by ſeeds in this country.

This plant is propagated by cuttings, which may be planted any time from May to the middle of Auguſt, for if they are planted later in the ſeaſon, there will not be time for them to get good root before the winter; theſe cuttings ſhould be planted in ſmall pots filled with light earth, and plunged into a very moderate hot-bed, where they ſhould be ſhaded from the ſun till they have taken root; theſe muſt be refreſhed with water two or three times a week, but they ſhould not have too much at each time, for much moiſture is very hurtful to theſe plants. When the cuttings have taken root, they ſhould be gradually inured to the open air, to prevent their ſhoots from being drawn up weak; afterward they ſhould be removed into the open air, and placed in a ſheltered ſituation, where they may remain till October, when they muſt be removed into an airy glaſs-caſe, that they may have as much ſun as poſſible, and enjoy the free air in mild weather, but ſecured from froſt and damp air, either of which will ſoon deſtroy them. During the winter they muſt be ſparingly watered, for the reaſon before given; but, in the ſummer, when the plants are placed in the open air, they will require to be frequently refreſhed with water in hot weather.

Theſe plants retain their leaves all the year, ſo they add to the variety of exotics in the winter ſeaſon.

ERUCA. Tourn. Inſt. R. H. 226. tab. 111. Braſſica. Lin. Gen. 734. Rocket; in French, *Roquette.*

The CHARACTERS are,

The empalement of the flower is compoſed of four oblong leaves, which ſtand erect, forming a tube. The flower hath four oblong petals, placed in form of a croſs, which are rounded at their ends, where they are broad, but narrow at their baſe, and are much longer than the empalement. It hath ſix ſtamina, four of which are a little longer than the empalement; the other two are ſhorter, terminated by acute ſegments. It hath an oblong taper germen, ſupporting a ſhort ſtyle, crowned by an obtuſe bifid ſtigma. The germen afterward becomes a taper-cornered pod with two cells, filled with roundiſh ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, which includes the plants whoſe flowers have four long and two ſhort ſtamina, and their ſeeds are contained in long pods. Dr. Linnæus has joined the common Rocket to his genus of Braſſica, and ſome of the other ſpecies he has diſtributed under his other genera; but as the common Rocket has been long eſtabliſhed as an officinal plant, I chuſe to continue this genus by its old title.

The SPECIES are,

1. ERUCA (*Sativa*) foliis pinnato-laciniatis, laciniis exterioribus majoribus. *Rocket with wing-ſhaped jagged leaves, whoſe outer ſegments are the largeſt.* Eruca ſativa major annua, flore albo ſtriato. J. B. 2. 859. *Greater Garden annual Rocket with a white ſtriped flower.*
2. ERUCA (*Bellidis folia*) foliis lanceolatis, pinnato-dentatis, caule nudo ſimplici. *Rocket with ſpear-ſhaped leaves which are indented, and a naked ſingle ſtalk.* Eruca bellidis folio. Mor. Hiſt. 2. 231. *Rocket with a Daiſy leaf.*
3. ERUCA (*Perennis*) foliis pinnatis glabris, caule ramoſo, floribus terminalibus. *Rocket with winged ſmooth leaves, and a branching ſtalk terminated by flowers.* Eruca tenuifolia perennis, flore luteo. J. B. 2. 861. *Narrow-leaved perennial Rocket with a yellow flower.*

4. Eruca (*Aſpera*) foliis dentato-pinnatifidis hirſutis, caule hiſpido, ſiliquis lævibus. *Rocket with indented, wing-pointed, hairy leaves, a rough ſtalk, and ſmooth pods.* Eruca ſylveſtris, major, lutea, caule aſpero. C. B. P. 98. *Greater wild Saffron-coloured Rocket with a rough ſtalk.*
5. Eruca (*Tenacetifolia*) foliis pinnatis, foliolis lanceolatis pinnatifidis. Prod. Leyd. 342. *Rocket with winged leaves, whoſe lobes are ſpear-ſhaped and wing-pointed.* Eruca Tenacetifolia. H. R. Par. *Rocket with a Tanſey leaf.*
6. Eruca (*Viminia*) foliis ſinuato-pinnatis, ſeſſilibus, caule ramoſo. *Rocket with wing-ſhaped ſinuated leaves ſitting cloſe to the ſtalks, which are branching.* Eruca Sicula burſæ paſtoris folio. C. B. P. 98. *Sicilian Rocket with a Shepherd's Purſe leaf.*

The firſt ſort is an annual plant, which was formerly much cultivated in the gardens as a ſallad herb, but at preſent is little known here, for it has been long rejected on account of its ſtrong ungrateful ſmell. It ſtands in the liſt of medicinal plants, but at preſent is ſeldom uſed, though it is reckoned a provocative and a good diuretic. If it is propagated for ſallads, the ſeeds ſhould be ſown in drills, in the ſame manner as is uſually practiſed for other ſmall ſallad herbs; for it muſt be eaten young, otherwiſe it will be too ſtrong for moſt palates. The winter and ſpring ſeaſons are the times when this herb is uſed; for when it is ſown in the ſummer, the plants ſoon run up to ſeed, and are then too rank. Where it is cultivated for the ſeed, which is ſometimes uſed in medicine, they ſhould be ſown in March, on an open ſpot of ground; and when the plants have put out four leaves, the ground ſhould be hoed to deſtroy the weeds, and the plants muſt be thinned, ſo as to leave them three or four inches aſunder; and in about five or ſix weeks after, the ground ſhould be a ſecond time hoed to deſtroy the weeds, which, if well performed, will prevent them from growing to injure the plants, till the ſeeds are ripe; when the plants ſhould be drawn up, and ſpread upon a cloth in the ſun for two or three days to dry, then the ſeeds may be beaten out of the pods, and put up for uſe.

The ſecond ſort grows naturally in the ſouth of France and Italy, where it is often eaten as a ſallad herb; this hath many ſpear-ſhaped leaves ariſing from the root, which are four or five inches long, and one inch broad in the middle, regularly indented on their edges, and ſpread on the ground; the ſtalks are ſingle, and riſe about a foot high; they are naked, ſeldom having more than one leaf, which is ſituated at the bottom; the flowers grow in looſe bunches on the top of the ſtalks, which are ſucceeded by pods two inches long, having two cells filled with ſmall round ſeeds. This is an annual plant, which may be propagated by ſeeds in the ſame manner as the former.

The third ſort grows naturally about Paris, and in many other parts of Europe; the leaves of this are narrow, and regularly divided like a winged leaf; the ſtalks branch out upward, and are terminated by looſe ſpikes of yellow flowers. This hath a perennial root, and an annual ſtalk.

The fourth ſort grows naturally upon old walls and buildings in many parts of England, where it continues flowering all the ſummer, but is rarely admitted into gardens. It is ſometimes uſed in medicine, for which reaſon I have here mentioned it.

The fifth ſort grows naturally about Turin, from whence I received the ſeeds. This hath fine divided leaves, ſomewhat like thoſe of Tanſey, but are of a hoary green colour; the ſtalks riſe a foot and a half high, which are fully garniſhed with leaves of the ſame form, but gradually diminiſh in their ſize upward; the flowers are produced in cluſters at the top of the ſtalks, they are ſmall, and of a pale yellow colour; theſe are ſucceeded by ſlender taper pods two inches long, which contain two rows of ſmall round ſeeds.

The ſixth ſort grows naturally in Italy and Spain; this is an annual plant, with many oblong leaves, which are ſmooth and regularly ſinuated on their ſides, in form of a winged leaf; they are five or ſix inches long, and one inch and a half broad, of a light green, having a hot biting taſte; the ſtalks riſe about a foot high, they are ſtrong, and divide into ſeveral branches; theſe are garniſhed with a ſingle leaf at each joint, ſhaped like thoſe below, but ſmaller. The flowers are produced in looſe cluſters at the end of the branches; theſe are white, and near as large as thoſe of the Garden Rocket, and are ſucceeded by taper pods three inches long, containing two rows of round ſeeds. Theſe plants are preſerved in ſome gardens for the ſake of variety, therefore they are here mentioned; and thoſe who are inclined to cultivate them, may do it by ſowing their ſeeds on a bed of light earth in an open ſituation; and when the plants come up, they will require no other culture but to thin them, and keep them clear from weeds. They flower in June and July, and their ſeeds ripen in Auguſt.

ERUCAGO. See Bunias.

ERVUM. Lin. Gen. Plant. 784. Tourn. Inſt. R. H. 398. tab. 221. *Bitter Vetch.*

The Characters are,

The empalement of the flower is divided into five equal parts, which end in acute points; the flower is of the butterfly kind, having a large, roundiſh, plain ſtandard, two obtuſe wings half the length of the ſtandard, and a ſhorter keel which is pointed. It hath ten ſtamina, nine joined, and one ſtanding ſeparate, terminated by ſingle ſummits. It hath an oblong germen, ſupporting a riſing ſtyle, crowned by an obtuſe ſtigma. The germen afterward becomes an oblong taper pod, jointed between each ſeed.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, which includes thoſe plants with a butterfly flower, with ten ſtamina ſeparated in two bodies. To this genus Dr. Linnæus has joined the Lens of Tournefort, and ſome ſpecies of Vicia. The difference which he makes between Vicia and Ervum is only in their ſtigmas, that of Vicia having an obtuſe ſtigma, bearded on the under ſide, and that of the Ervum is ſmooth.

The Species are,

1. Ervum (*Ervilia*) germinibus undato-plicatis foliis impari pinnatis. Hort. Upſal. 224. *Ervum whoſe germens are waved and folded, and unequal winged leaves.* Ervum verum. Camer. Hort. *The true Bitter Vetch.*
2. Ervum (*Lens*) pedunculis ſubbifloris ſeminibus compreſſis convexis. Lin. Sp. Plant. 738. *Ervum with foot-ſtalks having two flowers, and compreſſed ſeeds which are convex.* Lens vulgaris. C. B. P. 346. *Common Lentils.*
3. Ervum (*Monanthos*) pedunculis unifloris. Lin. Sp. Plant. 738. *Ervum with one flower on each foot-ſtalk.* Lens monanthos. H. L. 360. *One flowered Lentil.*
4. Ervum (*Tetraſpermum*) pedunculis ſubbifloris, ſeminibus globoſis quaternis. Flor. Suec. 606. *Ervum with two flowers on each foot-ſtalk, and four globular ſeeds in each pod.* Vicia ſegetum ſingularibus ſiliquis glabris. C. B. P. 345. *Corn Vetch with ſingle ſmooth pods.*
5. Ervum (*Hirſutum*) pedunculis multifloris, ſeminibus globoſis binis. Lin. Sp. Plant. 738. *Ervum having many flowers on a foot-ſtalk, and two globular ſeeds in each pod.* Vicia ſegetum, cum ſiliquis plurimis hirſutis. C. B. P. 345. *Corn-Vetch having many hairy pods.*

The firſt ſort grows naturally in Italy and Spain: it is an annual plant, which riſes with angular weak ſtalks a foot and a half high, garniſhed at each joint with one winged leaf, compoſed of fourteen or fifteen pair of lobes, very like thoſe of the Vetch, but narrower; the flowers come out from the ſide of the ſtalks, on foot-ſtalks an inch long, each ſuſtaining two pale-coloured flowers, which are ſucceeded by ſhort pods a little compreſſed, each having three or four round ſeeds; the pods ſwell at the place where each ſeed is lodged, ſo that it is called a jointed pod by many. The ſeeds of this plant ground to flour is ſometimes uſed in medicine; and the green herb is uſed for feeding of cattle in ſome countries, but it is not worth cultivating for that purpoſe in England.

The ſecond ſort is the common Lentil, which is cultivated in many parts of England, either as fodder

for cattle, or for the ſeeds, which are frequently uſed for meagre ſoups. This is alſo an annual plant, and is one of the leaſt of the pulſe kind, which is cultivated: it riſes with weak ſtalks a foot and a half high, garniſhed with winged leaves at each joint, compoſed of ſeveral pair of narrow lobes, terminated by a tendril or claſper, which faſtens to any neighbouring plant, and is thereby ſupported; the flowers come out upon ſhort foot-ſtalks from the ſide of the branches; they are ſmall, of a pale purple colour, three or four ſtanding upon a foot-ſtalk; theſe are ſucceeded by ſhort flat pods, containing two or three ſeeds, which are flat, round, and a little convex in the middle. The flowers appear in May, and the ſeeds ripen in July. The ſeeds of this plant are commonly ſown in March, where the land is dry, but in moiſt ground the beſt time is in April. The uſual quantity of ſeed allowed to an acre of land, is from one buſhel and a half to two buſhels. If theſe are ſown in drills in the ſame manner as Peas, they will ſucceed better than when they are ſown in broad caſt: the drills ſhould be a foot and a half aſunder, to allow room for the Dutch hoe to clean the ground between them; for if the weeds are permitted to grow among them, they will get above the Lentils and ſtarve them. The ſeeds of theſe will ripen in July, when the plants ſhould be cut and dried, and afterward the ſeeds ſhould be threſhed out for uſe.

The ſeeds of Lentils are frequently the common food of the poorer ſort of people in ſome of the iſlands of the Archipelago, and other warm countries, when they can meet with no better fare; for theſe they loath, when they have better food, from whence came the proverb, *Dives factus jam diſit gaudere lente*; which is applied to thoſe who ſpurn at thoſe things in eaſy circumſtances, which they were glad of in a low condition.

There is another ſort of Lentil which has been cultivated of late years in England, by the title of French Lentil. This is the Lens major of Caſpar Bauhin, and is undoubtedly a different ſpecies from the common, being twice the ſize, both in plant and ſeed, and conſtantly produces the ſame from ſeeds, though they do not differ much in their characters, but this is much better worth cultivating than the other. This pulſe is frequently called Tills in many parts of England.

The third ſort is very like the common Lentil, but differs from it, in having but one flower on each foot-ſtalk, whereas the other has three or four, but in other reſpects is the ſame, ſo may be cultivated in the ſame manner.

The fourth and fifth ſorts are ſmall annual Vetches, which grow naturally among the Wheat and Rye in many parts of England, ſo are not admitted into gardens; they are only mentioned here as weeds, which may be eaſily rooted out of the fields, if they are cut up when they begin to flower, and not permitted to ripen their ſeeds; for as they have annual roots, ſo if they do not ſcatter their ſeeds, they may be ſoon deſtroyed.

ERVUM ORIENTALE. See SOPHORA.

ERYNGIUM. Lin. Gen. Plant. 287. Tourn. Inſt. R. H. 327. tab. 173. Sea Holly, or Eryngo.

The CHARACTERS are,

It hath many ſmall flowers ſitting upon one common conical receptacle, whoſe involucrum is compoſed of ſeveral plain leaves; the flowers have a five-leaved erect empalement, coloured on the upper ſide, ſitting upon the germen; theſe form a roundiſh general umbel, which is uniform. The flowers have five oblong petals, which are turned inward at top and bottom, and five erect hairy ſtamina, ſtanding above the flowers, terminated by oblong ſummits; under the empalement is ſituated a prickly germen, ſupporting two ſlender ſtyles, crowned by ſingle ſtigmas. The germen afterward becomes an oval fruit divided in two parts, each having one oblong taper ſeed.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifth claſs, which includes thoſe plants whoſe flowers have five ſtamina and two ſtyles.

The SPECIES are,

1. ERYNGIUM (*Maritimum*) foliis radicalibus ſubrotundis plicatis ſpinoſis, capitulis pedunculatis. Hort. Cliff. 87. *Sea Holly whoſe lower leaves are folded, roundiſh, and prickly, and flower-heads having foot-ſtalks.* Eryngium maritimum. C. B. P. 386. *Sea Holly, or Eryngo.*
2. ERYNGIUM (*Campeſtre*) foliis amplexicaulibus pinnato laciniatis. Hort. Cliff. 87. *Sea Holly whoſe leaves embrace the ſtalks, and are cut like winged leaves.* Eryngium vulgare. C. B. P. 386. *Common Eryngo.*
3. ERYNGIUM (*Planum*) foliis radicalibus ovalibus planis crenatis, capitulis pedunculatis. Hort. Cliff. 87. *Sea Holly whoſe lower leaves are plain, oval, and crenated, with flower-heads having foot-ſtalks.* Eryngium latifolium planum. C. B. P. 386. *Broad-leaved plain Eryngo.*
4. ERYNGIUM (*Amethyſtinum*) foliis trifidis baſi ſubpinnatis. Lin. Sp. Plant. 337. *Eryngo with trifid leaves, and thoſe at the baſe winged.* Eryngium montanum amethyſtinum. C. B. P. 386. *Purple Violet-coloured Mountain Eryngo.*
5. ERYNGIUM (*Palleſcente*) foliis radicalibus rotundato-multifidis, capitulis pedunculatis. *Eryngo whoſe lower leaves are roundiſh and multifid, having foot-ſtalks to the heads of flowers.* Eryngium Alpinum amethyſtinum, capitulo majore palleſcente. Tourn. Inſt. 328. *Alpine Eryngo with a large pale-coloured head.*
6. ERYNGIUM (*Orientale*) foliis radicalibus pinnatis, ſerrato-ſpinoſis, foliolis trifidis. *Eryngo whoſe lower leaves are winged, ſpiny indented, and the ſmaller ones trifid.* Eryngium Orientale, foliis trifidis. T. Cor. 23. *Oriental Eryngo with trifid leaves.*
7. ERYNGIUM (*Aquaticum*) foliis gladiatis ſerrato-ſpinoſis, floralibus indiviſis caule ſimplici. Lin. Sp. Plant. 336. *Eryngo with ſword-ſhaped leaves which are ſpiny and indented, and the upper ones entire.* Eryngium foliis gladiolatis utrinque laxè ſerratis, denticulis ſubulatis. Lin. Hort. Cliff. 88. *American Sea Holly with leaves like the Aloe, lightly ſawed, commonly called Rattleſnake Weed in America.*
8. ERYNGIUM (*Puſillum*) foliis radicalibus oblongis inciſis, caule dichotomo, capitulis ſeſſilibus. Hort. Cliff. 87. *Eryngo with oblong lower leaves which are cut, a ſtalk divided by pairs, and heads ſitting cloſe.* Eryngium planum minus. C. B. P. 386. *Leſſer plain Eryngo.*
9. ERYNGIUM (*Alpinum*) foliis radicalibus cordatis oblongis, caulinis pinnatifidis, capitulo ſubcylindrico. Lin. Sp. Plant. 233. *Eryngo with oblong, heart-ſhaped, lower leaves, thoſe upon the ſtalks wing-pointed, and cylindrical heads.* Eryngium Alpinum cæruleum, capitulis diſpaci. C. B. P. 386. *Blue Alpine Eryngo with heads like the Teaſel.*
10. ERYNGIUM (*Fœtidum*) foliis radicalibus ſubenſiformibus ſerratis floralibus multifidis caule dichotomo. Lin. Sp. Plant. 336. *Eryngo with ſword-ſhaped lower leaves having ſpiny ſaws, the upper leaves ending in many points.* Eryngium foliis anguſtis ſerratis fœtidum. Sloan. Cat. Jam. 127. *Stinking Eryngo having narrow ſawed leaves, commonly called Feverweed.*

The firſt of theſe ſpecies grows in great plenty on the ſandy and gravelly ſhores in divers parts of England, the roots of which are candied, and ſent to London for medicinal uſe, and is the true Eryngo. This hath creeping roots, which run deep into the ground; the leaves are roundiſh, ſtiff, and of a gray colour, ſet with ſharp ſpines on the edges. The ſtalks riſe a foot high, and divide upward into two or three ſmaller branches; they are ſmooth, and garniſhed at each joint with leaves of the ſame form as the lower, but ſmaller, which embrace the ſtalks with their baſe; at the end of the branches come out the flowers in roundiſh prickly heads; under each is ſituated a range of narrow, ſtiff, prickly leaves, ſpreading like the rays of a ſtar; the flowers are of a whitiſh blue colour. They appear in July, and the ſtalks decay in autumn.

This ſort will grow in a garden, if the roots are planted in a gravelly ſoil, and produce their flowers annually; but the roots will not grow near ſo large or fleſhy as thoſe which grow on the ſea-ſhore, where they are flowed with ſalt water. The beſt time to tranſplant the roots is in autumn, when their leaves decay;

decay; the young roots are much better to remove than the old, becauſe they are furniſhed with fibres, ſo will readily take root: when theſe are fixed in the ground, they ſhould remain unremoved; and if they are kept clean from weeds, it is all the culture they will require.

The ſecond ſort grows naturally in ſeveral parts of England, where it is a very troubleſome weed, for the roots run deep into the ground, ſo are not eaſily deſtroyed by the plough; and they ſpread and multiply greatly in the ground, to the prejudice of whatever is ſown or planted on the land, therefore it is not admitted into gardens.

The third ſort makes a very pretty appearance when it is in flower, eſpecially that with the blue ſtalks and flowers, for there is a variety of this with white flowers and ſtalks; but as this doth not ſpread at the root, but keeps within bounds, ſo a few of the plants ſhould be allowed a place in the pleaſure-garden. This is propagated by ſeeds, which, if ſown in the autumn, will more certainly ſucceed than when it is ſown in the ſpring, for the latter commonly remains in the ground a year before they vegetate; and if the ſeeds are ſown where the plants are to remain, they will flower ſtronger than thoſe which are tranſplanted; for as they have long downright roots, ſo theſe are commonly broken in taking out of the ground, which greatly weaken the plants. The culture they require is to thin them where they are too near, keep them clean from weeds, and dig the ground about them every ſpring before they ſhoot.

The ſtalks of this ſort will riſe from two to three feet high, the lower leaves are oval and plain; thoſe of the white ſort are of a lighter green than thoſe of the blue; the upper part of the ſtalks of the white are of that colour, thoſe of the blue are of the colour of amethyſt; the ſtalks divide upward, where they are garniſhed with leaves divided into many points ending with ſpines; the flowers are produced in oval heads at the top of the ſtalk, ſtanding upon ſeparate foot-ſtalks. The flowers come out in July, and the ſeeds ripen in September.

The fourth ſort grows naturally upon the mountains of Syria, and alſo upon the Apennines. The lower leaves of this ſort are divided like the fingers of a hand, into five or ſix ſegments, which are very much cut at their extremities into many parts, and have ſmall ſpines; the ſtalk riſes about two feet high, garniſhed with ſmaller and more divided leaves; the upper part of the ſtalk, and alſo the heads of flowers, are of the fineſt amethyſt colour, ſo that they make a very fine appearance. This ſort flowers in July, and when the autumn proves dry, their ſeeds will ripen in September, but in wet ſeaſons the ſeeds never ripen in England. This is propagated by ſeeds in the ſame manner as the former ſort.

The fifth ſort has been ſuppoſed by many, to be only a variety of the fourth; but I have propagated it by ſeeds more than thirty years, without finding the leaſt alteration, ſo that I make no doubt of its being a diſtinct ſpecies. The lower leaves of this are very much divided, and the extremity of the ſegments form an oval or circle; theſe are divided into many fine parts, which end in ſpines; they are of a whitiſh gray in the middle, and green on the borders. The ſtalks riſe about two feet high, garniſhed at the joints with ſmaller leaves which are finely cut; the flowers terminate the ſtalk, they are of a light blue colour, and grow in larger heads than either of the former ſorts. It flowers in June and July, and the ſeeds ripen in autumn. This grows naturally on the Alps; it is a perennial plant, and may be propagated by ſeeds in the ſame manner as the former.

The ſixth ſort was diſcovered by Dr. Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris. This hath a perennial root, the lower leaves are regularly divided into ſeven or nine parts to the midrib, as the other winged leaves; theſe ſegments are ſawed on their edges, which end in ſharp thorns. The ſtalks riſe two feet high, ſending out ſide branches, garniſhed with ſtiff leaves, which are divided into narrower ſegments than the lower, and are terminated by three points. The flowers terminate the ſtalks, ſitting cloſe among the leaves, and are of a fine blue, as are alſo the leaves on the upper part of the ſtalks, ſo they make a pretty appearance. This flowers in July, but ſeldom ripens ſeeds in England. It is propagated in the ſame manner as the three former ſorts, and the plants require the ſame treatment.

The ſeventh ſort grows naturally in Virginia and Carolina, where it is titled Rattleſnake Weed, from its virtues of curing the bite of that venomous reptile. This hath a perennial root, from which ariſe ſeveral long leaves, which are ſawed on their edges, ending in ſpines; theſe leaves are diſpoſed round the root, after the ſame form of the Aloe or Yucca; they are of a gray colour, a foot long or more, and one inch and a half broad, ſtiff, and end in ſpines. The ſtalk is ſtrong, grows two feet high, dividing upward into ſeveral foot-ſtalks, each being terminated by an oval head of flowers, ſhaped like thoſe of the former ſorts; they are white, with a little caſt of pale blue. This ſort flowers in July, but unleſs the ſeaſon is very warm, the ſeeds will not ripen in England.

This ſort is propagated by ſeeds, which, if ſown in pots and plunged into a moderate hot-bed, the plants will come up much ſooner than thoſe which are ſown in the full ground, whereby they will be much ſtronger before the winter. When the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, filled with light earth; and if they are plunged into a moderate hot-bed, it will forward their taking root; then they muſt be gradually inured to bear the open air, into which they may be removed toward the latter end of May, and placed among other hardy exotic plants. When the plants have filled theſe pots with their roots, ſome of them may be ſhaken out, and planted in a warm border; the others may be put into larger pots, and in the autumn placed under a common frame, where they may be expoſed to the free air in mild weather, but ſheltered from ſevere froſt: the following ſpring theſe may be turned out of the pots, and planted in a warm ſituation, where they will endure the cold of our ordinary winters very well; and if in ſevere froſt they are covered with Straw, Peas-haulm, or any ſuch light covering, it will ſecure them from injury.

The eighth ſort grows naturally in Spain and Italy. This puts out oblong plain leaves from the root, which are cut on their edges; the ſtalks riſe about a foot high, and branch out into many forked diviſions, which are regular, and at each of theſe diviſions is ſituated a ſmall head of flowers, ſitting very cloſe between the branches. Theſe have no great beauty, ſo the plants are ſeldom cultivated in gardens, except for the ſake of variety.

The ninth ſort grows naturally on the mountains of Helvetia and Italy. The root is perennial, the lower leaves are oblong, heart-ſhaped, and plain; the ſtalks riſe from two to three feet high, branching out on their ſides upward; theſe are garniſhed with ſtiff leaves, which are deeply divided, ending in many points with ſharp ſpines; the flowers terminate the ſtalks, they are collected into conical heads, and are of a light blue colour, as are alſo the upper part of the ſtalks. This flowers in July, and the ſeeds are ripe in September; it is propagated by ſeeds in the ſame manner as the other ſorts.

The tenth ſort grows naturally in the Weſt-Indies, where it is much uſed in medicine, being accounted of great ſervice in the cure of fevers, from whence it hath the appellation of Feverweed in thoſe countries. The roots of this plant are compoſed of many ſmall fibres, which ſpread near the ſurface; the lower leaves are ſix or ſeven inches long; they are narrow at their baſe, and enlarge upward to an inch in breadth near the top, where they are rounded off on one ſide like a ſcymitar; they are finely ſawed on their edges, and are of a light green colour; the ſtalk riſes about a foot

foot high, and ſpreads out into many branches, garniſhed with ſmall leaves, which end in many points; the flowers are produced in ſmall heads which ſit cloſe to the ſtalks, coming out at every diviſion of the ſtalks, and at the end of the branches; theſe are of a dull white colour, ſo make little appearance. They appear in June and July, and the ſeeds ripen in autumn. As this plant is a native of hot countries, ſo it will not thrive in England, but in a warm ſtove. It is propagated by ſeeds, which muſt be ſown on a hot-bed; and when the plants are fit to remove, they ſhould be each planted into a ſmall pot, and plunged into the bark-bed, and afterward treated like other tender plants from the ſame country; the ſecond year they will produce flowers and ſeeds, ſoon after which they commonly decay.

ERYSIMUM. Lin. Gen. Plant. 729. Tourn. Inſt. R. H. 228. tab. 111. [Ἐρύσιμον, of ἐρύω, *Gr.* to draw out, becauſe this plant, by means of its hot quality, has the quality of drawing any thing out of the body in which it lies hid.] Hedge-Muſtard; in French, *Velar*, or *Tortelle*.

The CHARACTERS are,

The empalement of the flower is compoſed of four oblong, oval, coloured leaves; the flower hath four petals, placed in form of a croſs; theſe are oblong, plain, and obtuſe; it hath two nectarious glands, ſituated between the ſtamina. It hath ſix ſtamina, four of which are the length of the empalement, the other two are a little ſhorter, terminated by ſingle ſummits. It hath a very narrow four-cornered germen as long as the ſtamina, with a ſhort ſtyle, crowned by a ſmall permanent ſtigma; the germen afterward becomes a long, narrow, four-cornered pod with two cells, filled with ſmall round ſeeds.

This genus of plants is ranged in the ſecond ſection of Linnæus's fifteenth claſs, which includes thoſe plants whoſe flowers have four long and two ſhort ſtamina, and the ſeeds are included in long pods.

The SPECIES are,

1. ERYSIMUM (*Officinale*) ſiliquis ſpicæ adpreſſis foliis runcinatis. Hort. Cliff. 337. *Hedge Muſtard whoſe pods are preſſed cloſe to the ſpikes.* Eryſimum vulgare. C. B. P. 100. *Common Hedge Muſtard.*
2. ERYSIMUM (*Barbarea*) foliis lyratis extimo ſubrotundo. Flor. Suec. 557. *Hedge Muſtard with harp-ſhaped leaves, the outer ſegment being roundiſh.* Siſymbrium erucæ folio glabro flore. Tourn. Inſt. 226. *Winter Creſs with a Rocket leaf and yellow flower.*
3. ERYSIMUM (*Vernum*) foliis radicalibus lyratis, caulinis pinnato-ſinuatis, floribus laxè ſpicatis. *Hedge Muſtard with lower leaves ſhaped like a harp, thoſe on the ſtalks ſinuated and winged, and flowers growing in looſe ſpikes.* Siſymbrium erucæ folio glabro minus & præcocius. Tourn. Inſt. 226. *Smaller early Winter-Creſs with a ſmooth Rocket leaf.*
4. ERYSIMUM (*Orientale*) foliis radicalibus ovatis integerrimis, petiolis decurrentibus, caulinis oblongis dentatis ſeſſilibus. *Hedge Muſtard with lower leaves oval and entire, a winged foot-ſtalk, and the leaves upon the ſtalks oblong, indented, and ſitting cloſe.* Siſymbrium Orientale barbareæ facie, plantaginis folio. Tourn. Cor. 16. *Oriental Siſymbrium with the appearance of Water-Creſs and a Plantain Leaf.*
5. ERYSIMUM (*Minus*) foliis inferioribus pinnato-ſinuatis, ſuperioribus oblongis dentatis, floribus ſolitariis alaribus. *Hedge Muſtard whoſe lower leaves are winged and ſinuated, the upper oblong and indented, and ſingle flowers proceeding from the ſides of the ſtalks.* Siſymbrium minus erucæ folio glabro nigro, craſſo lucido. Boerh. Ind. alt. 2. 16. *Smaller Winter Creſs, with a ſmooth, dark, thick, ſhining Rocket leaf.*
6. ERYSIMUM (*Alliaria*) foliis cordatis. Hort. Cliff. 338. *Hedge Muſtard with heart-ſhaped leaves.* Heſperis allium redolens. Mor. Hiſt. 2. 252. *Dames Violet ſmelling like Garlick, commonly called Alliaria, Sauce alone, or Jack by the Hedge.*
7. ERYSIMUM (*Cheiranthoides*) foliis lanceolatis integerrimis. Flor. Lapp. 263. *Hedge Muſtard with entire ſpear-ſhaped leaves.* Leucoium heſperidis folio. Tourn. Inſt. 221. *Gilliflower with a Dames Violet leaf.*

The firſt ſort is uſed in medicine; this grows naturally on the ſide of foot-paths, and upon old walls in moſt parts of England, ſo is rarely cultivated in gardens, where, if it is once admitted, will ſoon become a troubleſome weed.

The ſecond and third ſorts alſo grow naturally on the banks in moſt parts of England; theſe were formerly eaten in winter ſallads, before the Engliſh gardens were furniſhed with better plants; ſince when they have been rejected, for they have a rank ſmell, and are diſagreeable to the palate.

The fourth and fifth ſorts are not natives of this country, but ſince they have been introduced into ſome Engliſh gardens, they have propagated themſelves by their ſcattered ſeeds in ſo plentiful a manner, as to become troubleſome weeds. Theſe have a reſemblance of the common Winter Creſs, but the lower leaves of the fourth ſort are entire, and of an oblong form; the upper leaves are oblong and indented, in which this differs.

The fifth ſort hath thicker leaves, which are of a dark lucid green colour, and the flowers come out ſingle from the wings of the ſtalk the whole length. Theſe differences are laſting, and do not alter.

The ſixth ſort grows naturally on the ſides of banks in many parts of England, ſo is not ſuffered to have a place in gardens. This was formerly eaten as a ſallad herb by the poorer ſort of people, who gave it the title of Sauce alone. This hath a rank ſmell and taſte of Garlick, and is very biting and hot on the palate; it is frequently preſcribed in medicine.

The ſeventh ſort is ſometimes found growing naturally upon old walls in ſome parts of England, particularly at Cambridge and Ely, at both which places I have obſerved it. This hath pretty long, hairy, ſoft leaves at the root; the ſtalks riſe near a foot high, their upper part being garniſhed with ſmall greeniſh white flowers in looſe ſpikes; theſe are ſucceeded by long compreſſed pods which hang downward. It flowers in May, and the ſeeds ripen in July and Auguſt; but the roots will abide ſeveral years, if they have a dry lean ſoil, or grow upon a wall, for in rich land they ſoon decay.

The other ſorts are ſometimes kept in botanic gardens for the ſake of variety; they are biennial plants, which periſh after they have perfected their ſeeds. Theſe may be propagated by ſowing their ſeeds in the autumn, in the places where they are to remain, and require no other culture but to thin them, and keep them clear from weeds.

ERYTHRINA. Lin. Gen. Plant. 762. Corallodendron. Tourn. Inſt. R. H. 661. tab. 446. Coral-tree.

The CHARACTERS are,

The flower hath a tubulous empalement of one leaf, which is entire and indented at the brim. The flower is of the butterfly kind, compoſed of five petals; the ſtandard is ſpear-ſhaped, and deflexed on the ſtyles; it is very long, and riſes upward; the two wings are ſcarce longer than the empalement, and are oval; the keel is compoſed of two petals which are no longer than the wings, and are indented at the top; it hath ten ſtamina which are joined below, and are a little curved, about half as long as the ſtandard, and are unequal in their length, terminated by arrow-pointed ſummits; it hath an awl-ſhaped germen with a foot-ſtalk, narrowed at the ſtyle, which is the length of the ſtamina, terminated by a ſingle ſtigma. The germen afterward becomes a long ſwelling pod ending in an acute point, having one cell, filled with kidney-ſhaped ſeeds.

This genus of plants is ranged in the third ſection of Linnæus's ſeventeenth claſs, which includes the plants with a butterfly flower, having ten ſtamina joined in two bodies.

The SPECIES are,

1. ERYTHRINA (*Herbacea*) foliis ternatis, caule ſimpliciſſimo inermi. Hort. Cliff. 354. *Erythrina with trifoliate leaves, and a ſingle ſmooth ſtalk.* Corallodendron humile, ſpicâ florum longiſſimâ, radice craſſiſſimâ. Cateſb. Carol. 49. tab. 49. *Low Coral-tree with a very*

long ſpike of flowers and thick root, commonly called the Carolina Coral-tree.

2. ERYTHRINA (*Corallodendron*) inermis, foliis ternatis, caule arboreo. *Smooth Erythrina with trifoliate leaves, and a tree-like ſtalk.* Coral arbor Americana. Hort. Amſt. 1. p. 211. *Smooth American Coral-tree.*
3. ERYTHRINA (*Spinoſa*) foliis ternatis, caule arboreo aculeato. Hort. Cliff. 354. *Erythrina with trifoliate leaves, and a tree-like prickly ſtalk.* Corallodendron triphyllum Americanum, ſpinoſum, flore ruberrimo. Tourn. Inſt. R. H. 661. *Prickly three-leaved American Coral-tree, with a very red flower.*
4. ERYTHRINA (*Picta*) foliis ternatis aculeatis caule arboreo aculeato. Lin. Sp. 993. *Erythrina with trifoliate prickly leaves, and a prickly tree-like ſtalk.* Corallodendron triphyllon Americanum, minus ſpinis & ſeminibus nigricantibus. Tourn. Inſt. R. H. 661. *Smaller three-leaved American Coral-tree, with blacker ſpines and ſeeds.*
5. ERYTHRINA (*Americana*) foliis ternatis acutis, caule arboreo aculeato, floribus ſpicatis longiſſimis. *Erythrina with trifoliate acute-pointed leaves, a prickly tree-like ſtalk, and very long ſpikes of flowers.* Corallodendron triphyllon Americanum, foliis mucronatis, ſeminibus coccineis. Houſt. MSS. *Three-leaved American Coral-tree, with acute-pointed leaves and ſcarlet ſeeds.*
6. ERYTHRINA (*Inermis*) foliis ternatis acutis, caule fruticoſo inermi, corollis longioribus clauſis. *Erythrina with acute trifoliate leaves, a ſhrubby unarmed ſtalk, and longer flowers which are cloſed.* Coral arbor non ſpinoſa, flore longiore & magis clauſo. Sloan. Cat. Jam. 142. *Coral-tree without ſpines, having a longer cloſer flower.*

The firſt ſort grows naturally in South Carolina, from whence Mr. Cateſby ſent the ſeeds in the year 1724, and many of the plants were then raiſed in ſeveral curious gardens. This hath a very large woody root, which ſeldom riſes more than a foot and a half high, from which come out freſh ſhoots every ſpring; theſe grow about two feet high, their lower part being garniſhed with trifoliate leaves, of a deep green colour, which are ſhaped like the point of an arrow; the upper part of the ſtalks are terminated by a long ſpike of ſcarlet flowers, compoſed of five petals, the upper petal being much longer than the other, ſo that at a ſmall diſtance the flowers appear to have but one petal. After the flowers are paſt, the germen turns to a taper pod five or ſix inches long, ſwelling in every part where the ſeeds are lodged, opening in one cell, containing five or ſix kidney-ſhaped ſcarlet ſeeds. Theſe plants flower in England, but they never produce ſeeds here.

The ſecond ſort hath a thick woody ſtem, which riſes about ten or twelve feet high in this country, but in its native country grows to twice that height, ſending out many ſtrong irregular branches, which are covered with a brown bark, garniſhed with trifoliate leaves ſtanding upon long foot-ſtalks, the middle lobe which terminates the leaf, being much larger than the other two; they are all heart-ſhaped, ſmooth, and of a deep green colour; the flowers come out at the end of the branches, in ſhort, thick, cloſe ſpikes; they are of a deep ſcarlet colour, and make a fine appearance. Theſe commonly are in beauty in May and June in this country, but are not ſucceeded by pods here; but in America, where the trees grow naturally, they have thick, ſwelling, crooked pods, which contain large kidney-ſhaped ſeeds, of a reddiſh purple colour. The leaves of this tree decay in the ſpring and fall off, ſo that in ſummer they appear to have no life; but in the autumn it puts out new leaves, which continue green all the winter. The flowers do not appear till the leaves drop, ſo that the branches are often naked at the time when the flowers are out.

The third ſort chiefly differs from the ſecond, in having its trunk, branches, and the foot-ſtalks of the leaves, armed with ſhort crooked ſpines, the leaves and flowers being very like thoſe of the ſecond ſort.

The fourth ſort hath ſhrubby ſtalks, which divide into branches, and ſeldom riſe above eight or nine feet high; theſe are armed in every part with ſtrong, crooked, black ſpines; the leaves are ſmaller than thoſe of the two laſt ſorts, and have a nearer reſemblance of the firſt; the foot-ſtalks of the leaves are armed with the ſame ſort of ſpines, and the midrib of the leaves have alſo ſome which are ſmaller and not ſo black; the flowers are of a paler ſcarlet, and grow in looſer ſpikes. The ſeeds are as large as thoſe of the ſecond ſort, but are of a dark purple colour.

This tree is generally planted in the Eaſt-Indies for a ſupport to the Pepper plants, which twine round the ſtem and branches, whereby they are prevented trailing on the ground; and as the branches of this tree will put out roots and grow, ſo they are preferable to any dead props, which in thoſe hot countries, where there is much rain, would ſoon rot.

The ſeeds of the fifth ſort were ſent me from La Vera Cruz, where the plants grow naturally; and ſince I have received ſeeds of the ſame ſort from the Cape of Good Hope, ſo that it is a native of both countries. The ſeeds of this are not half ſo large as thoſe of the ſecond or third ſorts, and are of a bright ſcarlet colour; the leaves are alſo much ſmaller, and have long acute points; the branches are very cloſely armed with crooked greeniſh ſpines, as are alſo the ribs and foot-ſtalks of the leaves. The flowers grow in very long cloſe ſpikes, and are of a beautiful ſcarlet colour.

I have alſo raiſed a variety of this with paler flowers and ſeeds, and the plants were leſs thorny; but as I was doubtful of its being a diſtinct ſpecies, ſo I only mention it here.

The ſixth ſort grows in Jamaica, and ſome of the other iſlands in America, from whence I have received the ſeeds. The pods of this ſort are longer, and not more than half ſo thick as thoſe of the ſecond ſort; the ſeeds are of a bright ſcarlet colour, they are longer and ſlenderer than thoſe of the other ſorts; the leaves are ſmall and acute-pointed, and the ſtalks are ſmooth and without ſpines: this doth not grow very large, but ſhoots out into branches at a little diſtance from the ground, which grow erect, ſo form a buſhy ſhrub. The flowers come out at the end of the branches in ſhort ſpikes; the ſtandard of the flower is long, and the ſides turn down over the wings, which are alſo longer than thoſe of the other ſpecies, and the whole flower is more cloſed.

I have alſo received ſpecimens of a variety of the third ſort from the iſland of Barbuda, with very ſhort flowers and pods; they came by the title of Bean-tree, which is the common appellation given to theſe trees in America; but the flowers were ſeparated from the ſtalks, ſo that I can give no account in what manner they grow, whether in long or ſhort ſpikes; but the ſtamina of theſe are much longer than the petals, in which it differs from all the other; the pods are very ſhort and crooked, but are rather thicker than thoſe of the third ſort; the leaves have the ſame appearance, and are armed with ſpines, as are alſo the ſtalks and branches, but the plants have not as yet produced any flowers here.

A few years ago I received a few very ſmall ſeeds of a Coral-tree from the Cape of Good Hope, which were of a bright ſcarlet colour; the plants have no ſpines on them, the leaves are much larger than the other ſorts, their ſtems are ſtrong, and have the appearance of growing to large trees; but as they are young, ſo there is no determining how they may differ from the other ſpecies.

There are two other ſorts of Coral-tree mentioned by Sir Hans Sloane, in his Hiſtory of Jamaica: one of which is by its characters a Sophora, under which genus we ſhall place it; and the other will be put under Robinia, to which genus it properly belongs.

Theſe plants when they produce their flowers, are ſome of the greateſt ornaments to the ſtoves we yet know; for their flowers are produced in large ſpikes, and are of a beautiful ſcarlet, ſo they make a fine appearance; but it is ſeldom they flower here, or in any of the northern parts of Europe; yet in the countries

countries where they naturally grow, they produce flowers in great plenty every year; ſo that it is very common there to ſee moſt of their branches terminated by large ſpikes of flowers, when they have no leaves upon them; and the firſt ſort, which grows in Carolina, is equally productive of flowers there, tho' here they do not flower oftener than once in two or three years, and the other ſorts not ſo frequent. I have tried by various methods to get them to flower; ſome I have treated hardily, by expoſing them to the open air during the ſummer ſeaſon, and in the winter kept them in a very moderate temperature of warmth; others I have kept plunged all the year in the tan-bed of the ſtove, and ſome have remained in a dry ſtove all the year, where in warm weather they had a large ſhare of air admitted to them, and in winter the air was kept to the temperate point. In this laſt place the plants have ſucceeded beſt, yet with this treatment they ſeldom flower; and this is the general complaint of every one who is poſſeſſed of theſe plants, not only in England, but alſo in Holland and France.

The firſt ſort may be kept through the winter in a warm green-houſe, but the plants ſo kept rarely flower; and the two ſorts which I have received from the Cape of Good Hope, have lived through the winter in a warm glaſs-caſe, without fire; but theſe have not made ſo good progreſs, as thoſe plants which were kept in a temperate warmth; ſo that in this country, it is much the beſt method of treating theſe plants, eſpecially while they are young.

Theſe plants are beſt propagated by ſeeds, when they can be procured from the countries where they naturally grow, for they do not produce any here, tho' they are annually brought to England in plenty. The ſeeds ſhould be ſown in ſmall pots, and plunged into a moderate hot-bed; where, if the ſeeds are good, the plants will come up in a month or five weeks; when they are two inches high, they ſhould be carefully ſhaken out of the pots, and each planted in a ſeparate ſmall pot, filled with light earth, and plunged into a moderate hot-bed of tanners bark, where they muſt be ſhaded from the ſun till they have taken new root; then they ſhould have a large ſhare of air admitted to them at all times when the weather is warm, to prevent their being drawn up weak; and as the plants increaſe in ſtrength, ſo they muſt have a larger ſhare of air. They muſt be frequently refreſhed with water, but not given to them in great plenty, for too much moiſture will rot the fibres of their roots. In the autumn the plants ſhould be removed into the ſtove; and for the two or three firſt winters, while the plants are young, they will require more warmth than when they have acquired more ſtrength. During the time the leaves continue in vigour, the plants will require to have water two or three times a week; but when they are deſtitute of leaves, it muſt be ſparingly given, for moiſture then is very hurtful to them. As the plants grow in ſtrength, ſo they muſt be more hardily treated; and by managing them differently, there will be a greater chance of getting them to flower. The third ſort is frequently planted in the gardens near Liſbon, where they annually flower and ripen their ſeeds, which have been brought me by perſons who gathered the pods from the trees.

Theſe plants may alſo be propagated by cuttings, which, if planted in pots during the ſummer months, and plunged into a hot-bed, will take root, but the ſeedling plants are beſt.

ERYTHRONIUM. Lin. Gen. Plant. 375. Dens canis. Tourn. Inſt. R. H. 378. tab. 202. Dog's Tooth, or Dog's Tooth Violet.

The CHARACTERS are,

The flower has no empalement; it is bell-ſhaped, and compoſed of ſix oblong petals, which ſpread open to their baſe. It hath ſix ſtamina joined to the ſtyle, terminated by oblong, erect, quadrangular ſummits. In the center is ſituated an oblong, obtuſe, three-cornered germen, ſupporting a ſingle ſtyle which is longer than the ſtamina, crowned by a triple, obtuſe, ſpreading ſtigma. The germen afterward becomes an oblong obtuſe capſule with three cells, filled with flat ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's ſixth claſs, in which he places thoſe plants whoſe flowers have ſix ſtamina and one ſtyle.

The SPECIES are,

1. ERYTHRONIUM (*Dens Canis*) foliis ovatis. *Erythronium with oval leaves.* Dens canis latiore rotundioreque folio, flore ex purpurâ rubente. C. B. P. 87. *Dog's Tooth Violet with a broader and rounder leaf, and a purple red flower.*
2. ERYTHRONIUM (*Longifolium*) foliis lanceolatis. *Erythronium with ſpear-ſhaped leaves.* Dens canis anguſtiore longioreque folio, flore ex albo purpuraſcente. C. B. P. 87. *Dog's Tooth Violet, with a longer and narrower leaf, and a purpliſh white flower.*

Theſe are the only diſtinct ſpecies which I have ſeen, but there are ſome varities of them, which are preſerved in curious gardens. Of the firſt ſort there is a white flower, which is pretty common in the gardens; another with a pale purple, and a third with yellow flowers, which are rare in England: and of the ſecond ſort there is one with a white, and another with a ſoft red flower, both which are now very rare in the gardens.

The firſt ſort ſends out two oval leaves, which are joined at their baſe: they are three inches long and one and a half broad in the middle, gradually leſſening toward the end; theſe at firſt embrace each other incloſing the flower, but afterward they ſpread flat upon the ground; they are ſpotted with purple and white ſpots all over their ſurface; between theſe riſes a ſingle naked ſtalk about four inches high, which is ſmooth, of a purple colour; this ſuſtains one flower, compoſed of ſix ſpear-ſhaped petals, which in this are purple, but in ſome they are white; the flower hangs downward, and the petals reflex and ſpread open to their baſe. In the center is ſituated the oblong three-cornered germen, ſupporting a ſingle ſtyle which is longer than the ſtamina, crowned by a triple ſtigma; the purple ſtamina ſtand cloſe about the ſtyle, and the ſtigma ſtands farther out. This plant flowers early in April, but ſeldom produces ſeeds in England. The root of this plant is white, oblong, and fleſhy, and ſhaped like a tooth; from whence it had the title of Dog's Tooth.

The ſecond ſort differs from the firſt in the ſhape of its leaves, which are longer and narrower, and the flowers are a little larger but not ſo well coloured. They grow naturally in Hungary, and in ſome parts of Italy. They are propagated by offsets from their roots, which they do not ſend out very plentifully, ſo they are not ſo commonly ſeen in the gardens, as moſt other flowers of the ſame ſeaſon: they love a ſhady ſituation and a gentle loamy ſoil, but ſhould not be too often removed. They may be tranſplanted any time after the beginning of June, when their leaves will be quite decayed, till the middle of September; but the roots ſhould not be kept very long out of the ground, for if they ſhrink, it will often cauſe them to rot. The roots of theſe flowers ſhould not be planted ſcattering in the borders of the flower-garden, but in patches near each other, where they will make a good appearance.

ESCHYNOMENE. See ÆSCHYNOMENA.

ESCHYNOMENOUS, ÆSCHYNOMENOUS PLANTS [Αἰσχυνόμενοι, of αἰσχύνομαι, *Gr.* to be aſhamed,] the ſenſitive plants; which, when one touches them, will ſhrink in, or let their leaves fall down.

ESCULENT PLANTS [of eſculentus, *Lat.* eatable,] ſuch plants, or the roots of them, as may be eaten; as Beets, Carrots, Leeks, Onions, Parſneps, Potatoes, Radiſhes, Horſe-radiſh, Scorzonera, &c.

ESPALIERS, are either rows of trees planted about a whole garden or plantation, or in hedges, ſo as to incloſe quarters or ſeparate parts of a garden, which are trained up flat in a cloſe hedge, for the defence of tender plants againſt the violence and injury of wind and weather.

The

The moſt commonly received notion of Epaliers are hedges of fruit-trees, which are trained up regularly to a lattice of wood work, formed either of Aſh-poles, or ſquare long timbers cut out of Fir, &c. and it is of this ſort of Eſpalier that I ſhall treat in this place.

Eſpaliers of fruit-trees are commonly planted to ſurround the quarters of a kitchen-garden, for which purpoſe they are of admirable uſe and beauty; for by laying out the walks of this garden regularly, which are bounded on each ſide by theſe hedges, when they are handſomely managed, they have a wonderful effect in ſheltering the kitchen-plants in the quarters, and alſo ſcreening them from the ſight of perſons in the walks; ſo that a kitchen-garden well laid out in this manner, and properly managed, will be equal to the fineſt regular parterre for beauty.

The trees chiefly planted for Eſpaliers are Apples, Pears, and ſome Plums; but the two former are moſtly uſed: ſome plant Eſpaliers of Apples grafted upon Paradiſe-ſtocks; but theſe being of humble growth, and a ſhort duration, are not ſo proper for this purpoſe, unleſs for very ſmall gardens; therefore I ſhould rather adviſe the having them upon Crab-ſtocks, or (if in ſmaller gardens, where the trees cannot be allowed to grow ſo high) upon what the gardeners call the Dutch-ſtock; which will cauſe them to bear ſooner, and prevent their growing too luxuriantly, and theſe will continue many years in vigour.

In chuſing the trees for an Eſpalier, endeavour as near as poſſible, to plant the ſeveral ſorts which are nearly of the ſame growth in one line, that the Eſpalier may be the more regular, and of an equal height, which greatly adds to their beauty; for if you plant trees which ſhoot very unequally in the ſame line, it will be impoſſible to make the Eſpalier regular: beſides, the diſtance of the trees muſt be in proportion to their growth; for ſome trees, viz. thoſe of a larger growth, ſhould be planted thirty or thirty-five feet aſunder; whereas thoſe of ſmaller growth, need not be above twenty-five feet diſtance from each other.

The width of the walks and borders between theſe Eſpaliers ſhould (in a large garden) be fourteen or ſixteen feet at leaſt; and if the trees are deſigned to be carried up pretty high, the diſtance ſhould be greater, that each ſide may receive the advantage of the ſun and air, which is abſolutely neceſſary, if you would have the fruit well taſted. And if your ground is ſo ſituated, that you are at full liberty which way to make the Eſpaliers, I would adviſe the placing the lines from the eaſt a little inclining to the ſouth, and toward the weſt a little inclining to the north, that the ſun may ſhine between the rows in the morning and evening when it is low; for in the middle of the day, when the ſun is advanced far above the horizon, it will ſhine over the tops of the Eſpaliers, and reach the ſurface of the earth about their roots, which is a matter of more conſequence than many people are aware of.

The ſorts of Apples proper for Eſpaliers, are the Golden Pippin, Nonpareil, Rennette Griſe, Aromatick Pippin, Holland Pippin, French Pippin, Wheeler's Ruſſet, Pile's Ruſſet, with ſome others. The ſeaſon for planting, and the method of pruning and training theſe trees, you will ſee under the articles of Apples and Pruning.

The ſorts of Pears proper for an Eſpalier, are chiefly the ſummer and autumn fruits, for ſome of the winter Pears ſeldom ſucceed well in an Eſpalier. Theſe trees, if deſigned for a ſtrong moiſt ſoil, ſhould be upon Quince-ſtocks; but if for a dry ſoil upon free-ſtocks. Their diſtance of planting muſt alſo be regulated by the growth of the trees, which are more unequal in Pears than Apples, and ſhould therefore be more carefully examined before they are planted. As for thoſe Pears upon free-ſtocks, the diſtance ſhould never be leſs than thirty feet for moderate growing trees; but for vigorous ſhooters, the ſpace of forty feet is little enough; eſpecially if the ſoil be ſtrong, in which caſe they ſhould be planted at a greater diſtance.

The particular ſorts of Pears I would recommend for an Eſpalier, are the Jargonelle, Blanquette, Poire ſans Peau, Summer Boncretien, Hamden's Bergamot, Autumn Bergamot, L'ambrette, Gros Rouſſelet, Chaumontelle, Beurre du Roy, Le Marquis, Creſſane, with ſome others of leſs note; always remembering, that thoſe Pears which are of the melting kind, will do better in Eſpalier than the breaking Pears, which ſeldom ripen well on an Eſpalier; as alſo that many ſorts of Pears will ripen well on an Eſpalier in a warm ſoil and ſituation, which require a wall in other places; you ſhould alſo be careful of the ſtocks theſe are grafted on; for if the breaking Pears are grafted upon Quince-ſtocks, the fruit will be ſtony, but the melting Pears will be improved by them. As to the method of planting, ſee the article Pear; and for pruning and managing, ſee Pruning.

I ſhall now give directions for making the Eſpalier, to which the trees are to be trained; but this ſhould not be done until the third year after the trees are planted; for while they are young, it will be ſufficient to drive a few ſhort ſtakes into the ground on each ſide of the trees, in a ſtrait line, to which the branches ſhould be faſtened in an horizontal poſition, as they are produced, in order to train them properly for the Eſpalier; which ſtakes may be placed nearer, or at a farther diſtance, according as the ſhoots produced may require; and theſe will be ſufficient for the three firſt years; for ſhould you frame the Eſpalier the firſt year the trees are planted, many of the ſtakes would rot before the Eſpalier is covered. The cheapeſt method to make theſe Eſpaliers is with Aſh-poles, of which you ſhould have two ſorts; one of the largeſt ſize, which contains thirteen poles in a bundle, and the other ſize thoſe of half a hundred. The firſt or largeſt ſize poles, ſhould be cut about ſeven feet and a half long; theſe are intended for upright ſtakes, and muſt be ſharpened at the largeſt end, that they may, with more eaſe, be driven into the ground; and if their bottoms are burred, or rubbed over with that compoſition mentioned in the article of Coverings, they may be preſerved a long time ſound; theſe ſhould be placed at a foot diſtance from each other in a direct line, and of an equal height, about ſix feet above ground; then you ſhould nail a row of ſtrait ſlender poles along upon the tops of the upright ſtakes, which will keep them exactly even, and continue to croſs the ſtakes with the ſmaller poles, and alſo with the tops which were cut off from the larger ſtakes, at about nine inches diſtance, row from row, from the top to the bottom of the ſtakes. Theſe rows of poles ſhould be faſtened with wire to the ſtakes, which if made of Fir, and painted over, will laſt a long time; and the largeſt end of the poles ſhould be cut flat, and nailed to the upright ſtakes, which will ſecure the Eſpalier almoſt as long as the poles will endure; whereas, if your faſtening is not ſtrong, the poles will be continually diſplaced with every ſtrong wind.

When your Eſpalier is thus framed, you muſt faſten the branches of the trees thereto either with ſmall Oſier-twigs, rope-yarn, or ſome ſuch binding, obſerving to train them in a horizontal poſition, and at equal diſtances; being careful not to croſs any of the branches, nor to lay them in too thick. The diſtance which ſhould be allowed for the branches of Pears and Apples, muſt be proportioned according to the ſize of their fruit; ſuch of them whoſe fruit is large, as the Summer Boncretien, Monſieur John, and Beurre du Roy Pears, and the Rennet Griſe, Holland Pippin, French Pippin, and other large Apples, ſhould have their branches ſix or eight inches diſtance at leaſt; and to thoſe of leſſer growth, four or five inches will be ſufficient. But for farther directions, I ſhall refer to the articles of the ſeveral fruits: as alſo that of Pruning, where theſe particulars will be ſufficiently explained.

But beſides this ſort of Eſpalier made with Aſh-poles, there is another ſort that is by many people preferred; which is framed with ſquare timbers cut to a proper ſize, according to the ſtrength thereof, or the expence the owner is willing to go to. Theſe, though they appear more ſightly, when well fixed and painted, are not of longer duration than one of the former, provided

vided it is well made, and the poles are ſtrong which are ſet upright; nor will they anſwer the purpoſe better, though they are vaſtly more expenſive; for the greateſt beauty conſiſts in the diſpoſing of the branches of tree; which, eſpecially in ſummer, when the leaves are on, will entirely hide from the ſight the frame of the Eſpalier; therefore all expence in erecting theſe is needleſs, farther than making proviſion to ſecure the branches of the trees in a regular order.

Fruit-trees thus planted, and well managed, are much preferable to thoſe trained up in any other figure, upon ſeveral accounts; as firſt, theſe take up very little room in a garden, ſo as not to be hurtful to the plants which grow in the quarters; and, ſecondly, the fruit upon theſe are better taſted than thoſe which grow upon dwarfs, the ſun and air having freer acceſs to every part of the tree; whereby the dampneſs ariſing from the ground is ſooner diſſipated, which is of ſingular advantage to fruit-trees (as hath been already ſhewn.) And as the trees againſt an Eſpalier are kept low, and the branches being faſtened to the Eſpalier, the fruit will not be blown down ſo ſoon by the wind; ſo that upon the whole, Eſpaliers muſt be allowed to be of great uſe and beauty.

EVER-GREEN THORN. See PYRACANTHA.

EVERLASTING PEA. See LATHYRUS.

EUGENIA. Michel. 108.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, cut into four ſegments: the flower hath four oblong obtuſe petals, twice as large as the empalement. It hath many ſtamina which are inſerted in the empalement, terminated by ſmall ſummits, and a turbinated germen ſituated under the flower, ſupporting a ſimple ſtyle the length of the ſtamina, crowned by a ſingle ſtigma. The germen afterward becomes a quadrangular plumb-ſhaped fruit crowned, having one cell incloſing one ſmooth roundiſh nut.

This genus of plants is ranged in the firſt ſection of Linnæus's twelfth claſs, intituled Icoſandria Monogynia, the flower having many ſtamina inſerted in the empalement, and one ſtyle.

The SPECIES are,

1. EUGENIA (*Malaccenſis*) foliis integerrimis, pedunculis racemoſis lateralibus. Flor. Zeyl. 187. *Eugenia with entire leaves and branching foot-ſtalks of flowers.* Jamboſa domeſtica. Rump. Amb. 1. p. 121.
2. EUGENIA (*Jamboo*) foliis integerrimis, pedunculis racemoſis terminalibus. Flor. Zeyl. 188. *Eugenia with entire leaves, and branching foot-ſtalks of flowers terminiating the branches.* Jamboſa ſylveſtris alba. Rump. Amb. 1. 127.

There are ſome other ſpecies of this genus which grow naturally in India, but thoſe here mentioned are the only ſorts which I have ſeen in the Engliſh gardens. Some plants of the firſt ſort I received from Dr. Heberden with ſome other plants, which were ſent by his brother from the Braſils, where it is cultivated for the table; ſo that the plants of this kind are common in moſt parts of the Eaſt-Indies.

This riſes with a tree-like ſtem, covered with a brown bark, which, in the countries where it grows naturally, riſes from twenty to thirty feet high, ſending out many branches, garniſhed with oblong entire leaves, ending in acute points: theſe are placed oppoſite, and when young, are of a bright purple colour; but as they grow older, become of a light green. The flowers are produced on the ſide of the branches, each foot-ſtalk branching into three or four others, each ſupporting one flower. Theſe are ſucceeded by irregular-ſhaped ſucculent fruit, incloſing one nut.

The ſecond ſort riſes to the ſame height as the firſt, but the leaves are longer and narrower. The flowers do, for the moſt part, terminate the branches, though there are ſome which come on their ſides. The fruit of this is ſmaller, rounder, and not ſo much eſteemed as thoſe of the firſt.

Theſe plants are preſerved in the gardens of the curious for the ſake of variety, though there is little hopes of their producing fruit in England. They may be propagated by their ſtones, if they can be obtained freſh from the countries of their natural growth. The ſtones ſhould be planted in ſmall pots filled with light earth, and plunged into a hot-bed, obſerving to keep the earth moiſt but not wet; in about ſix weeks the plants will appear; and when grown four inches high, they ſhould be carefully ſeparated, planting each into a ſmall pot, plunging them into the hot-bed again, being careful to ſhade them till they have taken new root; after which, they ſhould be treated in the ſame way as other tender plants from the ſame country, always plunging them into the tan-bed in the ſtove; and in winter be ſparing in water to them, for much wet will kill them.

EUONYMUS. Lin. Gen. Plant. 240. Tourn. Inſt. R. H. 617. tab. 388. [Εὐώνυμος, of εὖ, good, and ὄνομα, a name; ſo called by way of antiphraſis, becauſe it is hurtful to animals.] The Spindle-tree, or Prick-wood; in French, *Fuſain.*

The CHARACTERS are,

It hath a ſhort empalement to the flower of one leaf, which is divided into four or five ſegments. The flower hath four or five oval petals, which ſpread open. It hath five ſhort ſtamina, which are joined at their baſe to the germen, terminated by twin ſummits. In the center is ſituated a large oval germen, ſupporting a ſhort ſtyle, crowned by an obtuſe ſtigma. The germen afterwerd becomes a ſucculent four-cornered coloured capſule, having as many cells as angles, each containing one oval ſeed.

This genus of plants is ranged in the firſt ſection of Linnæus's fifth claſs, which includes thoſe plants whoſe flowers have five ſtamina and one ſtyle.

The SPECIES are,

1. EUONYMUS (*Vulgaris*) foliis lanceolatis, floribus tetrandriis, fructu tetragono. *Spindle-tree with ſpear-ſhaped leaves, flowers having four ſtamina, and quadrangular fruit.* Euonymus vulgaris, granis rubentibus. C. B. P. 428. *The common Spindle-tree.*
2. EUONYMUS (*Latifolius*) foliis ovato-lanceolatis, floribus pentandris, fructu pentagono, pedunculis longiſſimis. *Spindle-tree with oval ſpear-ſhaped leaves, flowers having five ſtamina, a five-cornered fruit, and very long foot-ſtalks.* Euonymus latifolius. C. B. P. 428. *Broad-leaved Spindle-tree.*
3. EUONYMUS (*Americanus*) floribus omnibus quinquefidis. Lin. Sp. Plant. 197. *Spindle-tree whoſe flowers are all divided into five points.* Euonymus Virginianus, pyracanthæ foliis, ſempervirens, capſulâ verrucarum inſtar aſperatâ rubente. Pluk. Phyt. 115. f. 5. *Virginian evergreen Spindle-tree with rough, warted, red ſeed-veſſels.*
4. EUONYMUS (*Pinnatis*) foliis pinnatis, fructu racemoſo trigono. *Spindle-tree with winged leaves, and three-cornered fruit growing in bunches.* Euonymus caudice non ramoſo, folio alato, fructu rotundo tripyreno. Sloan. Cat. Jam. 171. *Spindle-tree with an unbranching ſtalk, a winged leaf, and a round fruit having three ſeeds.*

The firſt ſort grows naturally in England. It is very common in hedges, and is ſometimes found growing in woods. This, when growing in hedges, is ſeldom ſeen of any conſiderable ſize, but rather appears like a ſhrub; but if planted ſingle, and trained up like other trees, will have a ſtrong woody ſtem, and riſe more than twenty feet high, dividing into many branches, garniſhed with ſpear-ſhaped leaves about three inches long, and one inch and a quarter broad in the middle, gradually diminiſhing to both ends; they are entire, of a deep green colour, and are placed oppoſite. The flowers come out in ſmall bunches from the ſide of the ſtalks, ſtanding upon ſlender foot-ſtalks; they are compoſed of four whitiſh petals, which are expanded in form of a croſs. The empalement is divided into four parts. The flowers have four ſtamina, and the fruit is four-cornered, and opens into four cells. This tree flowers the latter part of May and the beginning of June, and the fruit ripens in October, at which time the ſeed-veſſels ſpread open

and expoſe the ſeeds, which are of a beautiful red colour; ſo that when the branches are well ſtored with them, the trees make a good appearance at that ſeaſon, when growing among other ſorts. The wood of this tree is uſed by the muſical inſtrument-makers for toothing of organs and virginal keys; the branches are cut into tooth-pickers, and for making of ſkewers; and ſpindles are made of the wood, from whence the tree was titled Spindle-tree; but in ſome counties it is called Dogwood.

The ſecond ſort grows naturally in Auſtria and Hungary; this was very ſeldom ſeen in England till of late years, ſince I procured it from France, and from the ſeeds of thoſe plants great numbers have been ſince raiſed, ſo it is now pretty common in ſeveral of the nurſeries near London; this riſes with a ſtronger ſtem than the firſt, and grows to a larger ſize. The leaves are oval and ſpear-ſhaped, about four inches long, and two inches broad in the middle, of a light green colour, and entire; they are placed oppoſite on the branches, with ſhort foot-ſtalks. The flowers come out from the ſide of the branches, upon very ſlender foot-ſtalks, which are two inches and a half long; theſe branch out into a looſe bunch, ſo that the flowers ſtand upon ſeparate foot-ſtalks. The flowers have five petals, which at firſt are white, but afterward change to a purple colour; the empalement of the flower is divided into five parts. It hath five ſtamina, and the fruit is frequently five-cornered; the fruit is much larger than that of the common ſort, and the foot-ſtalks being weak, the fruit always hang down. Dr. Linnæus has ſuppoſed theſe to be but one ſpecies, and has taken the characters of this genus from the ſecond ſort, whoſe flowers have five ſtamina and five petals, and the fruit five corners; but all thoſe of the common ſort which I have examined have but four, and theſe differences are permanent in thoſe plants which riſe from ſeeds; for I have raiſed many of both ſorts from ſeeds, but have never found either of them alter.

The third ſort grows naturally in Virginia, Carolina, and other parts of North America; this riſes with a ſhrubby ſtalk to the height of eight or ten feet, dividing into many branches, which come out oppoſite from the joints of the ſtem; theſe are garniſhed with ſpear-ſhaped leaves, which are two inches long, and about three quarters of an inch broad in the middle, ending in acute points; they are placed oppoſite, and continue green all the year. The flowers are produced at the end of the branches, and alſo from the ſides, in ſmall cluſters, which are ſucceeded by round capſules, which are cloſely armed by rough protuberances. This flowers in July, but ſeldom produces ripe fruit in England,

As this is an evergreen ſhrub, ſo it merits a place in every curious garden, and particularly in all plantations of evergreen trees and ſhrubs; there is a variety of this with variegated leaves, which is preſerved in the nurſery-gardens.

The fourth ſort grows naturally in Jamaica, and ſome of the other iſlands in the Weſt-Indies; this riſes with an upright woody ſtalk, to the height of ten or twelve feet; at the top it divides into two or three ſhort branches, which are garniſhed by winged leaves, compoſed of ſix or ſeven pair of ſmall leaves (or lobes) about two inches long, and one inch broad; theſe leaves come out without order, ſtanding upon long foot-ſtalks. The flowers come out in cluſters from the ſide of the branches, toward their end; theſe are ſucceeded by roundiſh capſules, having a thick brown cover, which open in three cells, each containing a ſingle hard ſeed.

The two firſt ſorts may be propagated either by ſeeds, or layers; if by ſeeds, they ſhould be ſown in autumn, ſoon after they are ripe; then the plants will come up the ſpring following; but if the ſeeds are not ſown till ſpring, the plants will not appear till the following ſpring, whereby a whole year is loſt. The ſeeds ſhould be ſown upon a ſhady border, where they will ſucceed better than when they are more expoſed to the ſun.

When the plants come up, they will require no other care but to keep them clean from weeds till the following autumn, when, as ſoon as their leaves decay, the plants ſhould be taken up and tranſplanted into a nurſery, in rows two feet diſtant, and the plants one foot aſunder in the rows; in this place they may remain two years, and then they may be removed to the places where they are to remain.

When theſe are propagated by layers, the young ſhoots ſhould be laid down in autumn; and if the joint which is laid deepeſt in the ground is ſlit, as is practiſed for Carnations, it will cauſe them to put out roots much ſooner than they otherwiſe would do; theſe layers will be ſufficiently rooted in one year to bear tranſplanting, when they ſhould be taken from the old plants, and treated in the ſame way as the ſeedlings. The cuttings of theſe ſorts, planted in a ſhady border, will take root, but they ſhould be planted in autumn, as ſoon as their leaves begin to fall; they ſhould be the ſhoots of the ſame year, with a knot of the former year at bottom.

The third ſort, which grows naturally in North America, is ſo hardy as rarely to ſuffer by cold in England, provided it is not planted in places very much expoſed. This may be propagated by laying down the young branches in the autumn, obſerving to tongue them in the ſame manner as is practiſed in laying of Carnations: theſe will have made good roots in one year, when they may be cut from the old plants, and planted in a nurſery for two years to get ſtrength; after which, they ſhould be planted where they are deſigned to remain.

The fourth ſort is a native of warmer countries, ſo cannot be preſerved in England, unleſs it is placed in a ſtove in winter: this is generally propagated by ſeeds, which muſt be ſown in pots, and plunged into a hot-bed; and when the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, and plunged into the hot-bed again, being careful to ſhade them until they have taken new root; after which they muſt be treated in the ſame way as other tender plants of the ſame countries. This ſort may alſo be propagated by cuttings during any of the ſummer months.

EUPATOROIPHALACRON. See VERBESINA.

EUPATORIUM. Lin. Gen. Plant. 842. Tourn. Inſt. R. H. 455. tab. 259. [Εὐπατώριον, of king Eupator, who firſt brought this plant into uſe.] Hemp Agrimony; in French, *Eupatoire*.

The CHARACTERS are,

It hath a compound flower, compoſed of ſeveral hermaphrodite florets, which are funnel-ſhaped, cut into five parts at the brim, which ſpread open; theſe are included in one common ſcaly empalement, whoſe ſcales are narrow, erect, and unequal. The florets have each five ſhort hairy ſtamina, terminated by cylindrical ſummits. In the bottom is ſituated a ſmall germen, ſupporting a long ſlender ſtyle, which is bifid, crowned by a narrow ſtigma. The germen afterward becomes an oblong ſeed, crowned with down, ſitting in the empalement.

This genus of plants is ranged in the firſt ſection of Linnæus's nineteenth claſs, which includes thoſe plants with compound flowers, which have only hermaphrodite fruitful flowers.

The SPECIES are,

1. EUPATORIUM (*Cannabinum*) foliis digitatis. Hort. Cliff. 396. *Eupatorium with fingered leaves.* Eupatorium cannabinum. C. B. P. 320. *Common Hemp Agrimony.*
2. EUPATORIUM (*Maculatum*) foliis lanceolato-ovatis, ſerratis, petiolatis, caule erecto. Hort. Cliff. 396. *Eupatorium with ſpear-ſhaped oval leaves which are ſawed, having foot-ſtalks, and an upright ſtalk.* Eupatorium Novæ Angliæ, urticæ foliis, floribus purpuraſcentibus, maculato caule. H. L. *New England Hemp Agrimony with Nettle leaves, purpliſh flowers, and ſpotted ſtalks.*
3. EUPATORIUM (*Purpureum*) foliis ſubverticillatis, lanceolatis ſerratis petiolatis rugoſis. Lin. Sp. Plant. 838. *Eupatorium with leaves placed in whorls, which are ſpear-*

ſpear-ſhaped, ſawed, rough, and have foot-ſtalks. Eupatorium folio oblongo rugoſo, caule purpuraſcente. Tourn. Inſt. 456. *Canada Hemp Agrimony with a long rough leaf, and purpliſh ſtalk.*

4. EUPATORIUM (*Scandens*) caule volubili, foliis cordatis dentatis acutis. Hort. Cliff. 396. *Eupatorium with a twining ſtalk and heart-ſhaped leaves, which are ſharply indented.* Eupatorium Americanum ſcandens, haſtato magis acuminato folio. Vaill. Mem. 1719. *Climbing American Hemp Agrimony, with a ſpear-like ſharp-pointed leaf.*

5. EUPATORIUM (*Rotundifolium*) foliis ſeſſilibus diſtinctis ſubrotundo-cordatis. Lin. Sp. Plant. 837. *Eupatorium with roundiſh heart-ſhaped leaves ſitting cloſe to the ſtalks, and are diſtinct.* Eupatorium Americanum, foliis rotundioribus abſque pediculis. Vaill. Mem. 1719. *American Hemp Agrimony with round leaves, having no foot-ſtalks.*

6. EUPATORIUM (*Fruticoſum*) foliis oblongo-cordatis, floribus paniculatis, caule fruticoſo ſcandente. *Eupatorium with oblong heart-ſhaped leaves, paniculated flowers, and a climbing ſhrubby ſtalk.* Eupatorium ſcandens, foliis ſubrotundis lucidis, floribus ſpicatis albis. Houſt. MSS. *Climbing Hemp Agrimony with roundiſh ſhining leaves, and white flowers growing in ſpikes.*

7. EUPATORIUM (*Odoratum*) foliis ovatis, obtuſe ſerratis petiolatis trinerviis, calycibus ſimplicibus. Lin. Sp. Plant. 839. *Eupatorium with oval, obtuſe, ſawed, three-veined leaves, having foot-ſtalks, and ſingle empalements to the flowers.* Eupatorium Americanum, teucrii folio, flore niveo. Vaill. Mem. Acad. Scien. *American Hemp Agrimony with a Tree Germander leaf, and a white flower.*

8. EUPATORIUM (*Perfoliatum*) foliis connatis tomentoſis. Hort. Cliff. 396. *Eupatorium with woolly leaves joined at their baſe.* Eupatorium Virginianum, ſalviæ foliis longiſſimis acuminatis, perfoliatum. Pluk. Alm. *Virginian perfoliate Hemp Agrimony, with long Sage-like leaves cloſely ſurrounding the ſtalk.*

9. EUPATORIUM (*Betonicifolium*) foliis oblongis, obtuſis, crenatis, glabris, calycibus ſimplicibus. *Eupatorium with oblong, obtuſe, ſmooth, crenated leaves, and ſingle empalements to the flowers.* Eupatorium betonicæ folio glabro & carnoſo, flore cœruleo. Houſt. MSS. *Hemp Agrimony with a fleſhy ſmooth Betony leaf, and a blue flower.*

10. EUPATORIUM (*Morifolium*) foliis cordatis ſerratis caule erecto arboreo. *Eupatorium with heart-ſhaped ſawed leaves, and an upright tree-like ſtalk.* Eupatorium Americanum arboreſcens, mori folio, floribus albicantibus. Houſt. MSS. *Tree-like American Hemp Agrimony, with a Mulberry leaf and white flowers.*

11. EUPATORIUM (*Punctatum*) foliis ovatis petiolatis integris, caule fruticoſo ramoſo, calycibus ſimplicibus. *Eupatorium with oval entire leaves having foot-ſtalks, a branching ſhrubby ſtalk, and ſingle empalements to the flowers.* Eupatorium Americanum fruteſcens, balſaminæ lutæ foliis, nigris maculis punctatis. Houſt. MSS. *American ſhrubby Hemp Agrimony, with yellow Balſamine leaves ſpotted with black.*

12. EUPATORIUM (*Hyſſopifolium*) foliis lanceolato-linearibus trinerviis ſub integerrimis. Lin. Sp. Plant. 836. *Eupatorium with narrow, ſpear-ſhaped, entire leaves, having three nerves.* Eupatorium Virginianum, folio anguſto floribus albis. Hort. Elth. 141. tab. 115. f. 140. *Virginia Hemp Agrimony, with a narrow leaf, and white flowers.*

13. EUPATORIUM (*Ramoſum*) foliis lanceolato-linearibus acutis, ſuperne ſerratis caule ramoſo. *Hemp Agrimony with narrow, ſpear-ſhaped, pointed leaves, ſawed on their upper part, and a branching ſtalk.*

14. EUPATORIUM (*Conyzoides*) foliis cordatis acutis, dentatis, trinerviis, caule fruiticoſo ramoſo. *Eupatorium with pointed, heart-ſhaped, ſawed leaves, having three veins, and a branching ſhrubby ſtalk.* Conyza fruticoſa, folio haſtato, flore pallide purpureo. Sloan. Cat. Jam. 124. *Shrubby Fleabane with a ſpear-ſhaped leaf, and a pale purple flower.*

15. EUPATORIUM (*Paniculatum*) foliis cordatis rugoſis crenatis, caule paniculato. *Eupatorium with rough, heart-ſhaped, crenated leaves, and a paniculated ſtalk.* Conyza Salviæ foliis conjugatis, floribus ſpicatis ſubbentibus. Houſt. MSS. *Fleabane with Sage leaves placed oppoſite, and red flowers growing in ſpikes.*

16. EUPATORIUM (*Houſtonis*) foliis cordatis acuminatis, caule volubili, floribus ſpicatis racemoſis. *Eupatorium with heart-ſhaped pointed leaves, a twining ſtalk, and branching ſpiked flowers.* Eupatorium Americanum, ſcandens, folio haſtato glabro, floribus ſpicatis. Houſt. MSS. *Climbing American Hemp Agrimony with a ſmooth ſpear-ſhaped leaf, and ſpiked flowers.*

17. EUPATORIUM (*Trifoliatum*) foliis ternis. Flor. Virg. 119. Lin. Sp. Plant 838. *Hemp Agrimony with trifoliate leaves.*

18. EUPATORIUM (*Altiſſimum*) foliis lanceolatis nervoſis, inferioribus extimo ſub ſerratis, caule fruticoſo. Hort. Upſal. 152. *Eupatorium with nervous ſpear-ſhaped leaves, whoſe lower leaves are ſawed on their edges, and ſtand in whorls round the ſtalks.* Eupatorium folio oblongo, rugoſo, ampliori, caule vireſcente. Tourn. Inſt. R. H. 456. *Hemp Agrimony with a large, oblong, rough leaf, and a green ſtalk.*

19. EUPATORIUM (*Cæleſtinum*) foliis cordato-ovatis, obtuſe ſerratis petiolatis, calycibus multifloris. Lin. Sp. Plant. 838. *Eupatorium with heart-ſhaped oval leaves obtuſely ſawed, having foot-ſtalks, and many flowers to the empalements.* Eupatorium ſcorodoniæ folio, flore cæruleo. Hort. Elth. 140. tab. 114. *Hemp Agrimony with a Wood Sage leaf, and a blue flower.*

The laſt grows naturally in Carolina, from whence the late Dr. Dale ſent me the ſeeds; theſe plants flowered very finely the year after they were raiſed, but never have flowered ſince, for the roots creep greatly in the ground, but never ſend up any ſtalks.

The firſt ſort grows naturally by the ſide of rivers and ditches in moſt parts of England, and is the only ſpecies of this genus, which is known to grow naturally in Europe; this is eſteemed as a very good vulnerary herb, ſo ſtands in the liſt of medicinal plants. It is ſeldom admitted into gardens, becauſe, whereever it is ſuffered to ſeed, the ground will be well ſtored with the plants to a great diſtance.

The ſecond ſort grows naturally in ſeveral parts of North America, from whence it has been introduced to the gardens in Europe; this hath a perennial root, but an annual ſtalk, which riſes about two feet and a half high; it is purple, and has many dark ſpots upon it. The leaves are rough, oval and ſpear-ſhaped, having foot-ſtalks; they are placed by threes round the ſtalk toward the bottom, but upward by pairs oppoſite at each joint. The ſtalks are terminated by cluſters of purple flowers, growing in a ſort of corymbus; theſe come out in July and Auguſt, and in warm ſeaſons will ripen its ſeeds in autumn.

The third ſort grows naturally in North America; this riſes with an upright ſtalk near four feet high, garniſhed with long, narrow, ſpear-ſhaped leaves at each joint; theſe are deeply ſawed on their edges, and the midrib is oblique to the foot-ſtalk; they are placed by fours round the ſtalk in whorls, and are of a dark green colour. The ſtalks are terminated by bunches of purple flowers like the laſt, which appear at the ſame time. This hath a perennial root and an annual ſtalk.

The fourth ſort grows naturally in Virginia and Carolina; this hath a perennial root, which ſends out many twining ſtalks in the ſpring; theſe twiſt about any neighbouring ſupport, and riſe to the height of five or ſix feet, garniſhed at each joint with two heart-ſhaped leaves, which are indented on their edges, and terminate in acute points; at each joint there are two ſmall ſide branches come out, which are terminated by cluſters of white flowers, ſo that the ſtalks ſeem covered with them moſt part of their length; but as theſe come pretty late in the ſeaſon, ſo unleſs the ſummers prove warm, the plants do not flower well in England.

There is another of theſe plants with purple flowers, ſtanding upon longer foot-ſtalks, which was ſent me from Campeachy; but the ſtalks and leaves are very like

like thoſe of this ſort, ſo that I doubt whether it be a diſtinct ſpecies.

The fifth ſort grows naturally in New England and Virginia, from both of theſe counties I have received the ſeeds; this hath a perennial root and an annual ſtalk; it riſes with upright ſtalks about a foot high; theſe have their joints pretty near each other, where they are garniſhed with roundiſh heart-ſhaped leaves, ſitting cloſe to the ſtalks; they are ſawed on their edg s, and are of a light green colour. The flowers are produced in ſmall looſe panicles at the top of the ſtalks; they are white, and have two ſmall green leaves immediately under the flowers. Theſe flowers appear the latter end of June, but the ſeeds ſeldom ripen in England.

The ſixth ſort grows naturally at La Vera Cruz in America, from whence the late Dr. Houſton ſent me the ſeeds; this hath a ſhrubby climbing ſtalk, which riſes to the height of ten or twelve feet, faſtening itſelf to any neighbouring prop for ſupport, and is garniſhed with heart-ſhaped leaves, placed oppoſite; they are about three inches long, and one and a half broad, of a lucid green; the flowers come out in long branching panicles, which proceed from the ſide of the ſtalks, and are terminated by a branching panicle of white flowers. This ſort is tender, ſo will not live in this country without artificial heat.

The ſeventh ſort riſes with upright ſtalks three feet high, garniſhed with oval leaves at each joint, which are placed oppoſite; they have very ſhort foot-ſtalks, and are ſawed on their edges; from the ſides of the ſtalks, at every joint, is produced two ſlender branches, which ſtand erect; theſe, and the principal ſtalks alſo, are terminated by cluſters of white flowers; they appear in Auguſt and September, and the ſtalks decay in winter, but the root is perennial. This grows naturally in Penſylvania, and other parts of America.

The eighth ſort grows naturally in Virginia and Philadelphia; this hath a perennial root and an annual ſtalk. The ſtalks riſe from two to three feet high; they are hairy, and garniſhed with rough leaves at each joint, which are from three to four inches long, and about an inch broad at their baſe, gradually leſſening to a very acute point; the two leaves are joined at their baſe, ſo the ſtalks ſeem to grow through them; they are of a dark green, and are covered with ſhort hairs. The upper part of the ſtalk divides into many ſlender foot-ſtalks, each ſuſtaining a cloſe cluſter of white flowers. Theſe come out in July, and in warm ſeaſons the ſeeds will ſometimes ripen in England.

The ninth ſort grows naturally at La Vera Cruz, from whence the late Dr. Houſtoun ſent me the ſeeds; this riſes with an upright ſtalk near two feet high, garniſhed toward the bottom with oblong obtuſe leaves, which are of a thick ſubſtance, and crenated on their edges; the upper part of the ſtalk is naked to the top, where the flowers come out in a thick panicle; they are blue, and have ſingle empalements. This flowers late in autumn, but never ripens ſeeds here; the root is biennial, and periſhes ſoon after it has flowered.

The tenth ſort was ſent me by the late Dr. Houſtoun from La Vera Cruz, where he found it growing naturally; this hath a thick woody ſtalk, which riſes twelve or fourteen feet high, ſending out many branches, which are channelled, and covered with a brown bark, garniſhed with regular heart-ſhaped leaves as large as thoſe of the Mulberry-tree; they are of a light green colour, and ſawed on their edges, placed oppoſite upon foot-ſtalks, near two inches long; the upper part of the branches are terminated by four or five pair of foot-ſtalks, which come out oppoſite from the joints, and the top is terminated by an odd one; theſe ſuſtain branching panicles of white flowers, which together form a long looſe pyramidal thyrſe, and make a fine appearance, for there are no leaves intermixed with the flowers, but ſo far as the ſpike reaches the ſtalks are naked. This ſort has flowered in the Chelſea garden, but did not produce ſeeds.

The eleventh ſort grows naturally at La Vera Cruz, from whence the late Dr. Houſtoun ſent it me; this riſes with many ſhrubby ſtalks near five feet high, which divide into many ſlender branches, whoſe joints are three or four inches aſunder; at each of theſe come out two oval leaves about three quarters of an inch long, and half an inch broad, ſtanding upon long ſlender foot-ſtalks; they have ſeveral black ſpots on their ſurface. The branches come out horizontal, and are terminated by ſmall bunches of white flowers, whoſe empalements are ſingle, and compoſed of ſeven narrow ſpear-ſhaped leaves, which are divided to the bottom.

The twelfth ſort riſes with an upright round ſtalk to the height of three feet, ſending out ſeveral branches toward the top, which come out regularly by pairs; they are garniſhed with leaves, placed by pairs; theſe are two inches and a half long, and about one third of an inch broad, having three longitudinal veins; they are of a light green colour, and entire. The flowers ſtand upon long foot-ſtalks at the end of the branches, ſome ſuſtaining one, ſome two, and others three or four flowers; they are white, and appear late in autumn. This grows naturally in Carolina.

The thirteenth ſort grows naturally in Maryland; this hath a perennial root and an annual ſtalk, which riſes three feet high, dividing upward into many branches, which are cloſely garniſhed with narrow ſpear-ſhaped leaves, which are from two to three inches long, and a quarter of an inch broad, of a deep green, ſitting cloſe to the branches; they have three longitudinal veins, and their upper part ſharply ſawed on their edges, ending in acute points. The branches are terminated by roundiſh cluſters of white flowers, which appear in Auguſt, and continue till October; and in warm ſeaſons they are ſucceeded by ſeeds, which ripen here.

The fourteenth ſort grows naturally in Jamaica, and in moſt of the other iſlands in the Weſt-Indies; this riſes with ſhrubby ſtalks about ſix or ſeven feet high, dividing into many branches, which are garniſhed with heart-ſhaped leaves, ending in acute points, indented on their edges, having three longitudinal veins; the upper part of the branches are terminated by ſlender foot-ſtalks, each ſuſtaining a ſmall cluſter of white flowers, included in oblong ſcaly empalements of a ſilvery colour.

The fifteenth ſort was ſent me from La Vera Cruz by the late Dr. Houſtoun; this riſes with an upright branching ſtalk three feet high, ſending out two ſide branches from every joint, almoſt the whole length, which are terminated by looſe ſpikes of red flowers, as is alſo the principal ſtalk. The leaves are heart-ſhaped, rough, and are crenated on their edges, ſitting cloſe to the ſtalks; they are of a light green, and a little hoary.

The ſixteenth ſort was ſent me from Jamaica by the late Dr. Houſtoun; this hath ſlender twining ſtalks, which faſten themſelves to any neighbouring ſupport, and riſe eight or ten feet high, ſending out ſmall branches oppoſite, at moſt of the upper joints. The leaves on the lower part of the ſtalk are heart-ſhaped, ending in acute points; the upper leaves are almoſt triangular, they are ſmooth, and of a lucid green; the upper part of the ſtalks have long branching ſpikes of white flowers, which are ſmall, and ſit cloſe to the foot-ſtalks.

The ſeventeenth ſort grows naturally in Penſylvania; this hath a perennial root, from which ariſe ſeveral upright ſtalks, which grow to the height of ſeven or eight feet, in a moiſt ſoil, or where they are ſupplied with water in dry weather, and are garniſhed with oval, rough, ſpear-ſhaped leaves, which are a little ſawed on their edges; they are placed in whorls round the ſtalks, ſometimes ſeven, at other places four or five of theſe ſtand at each joint; they are about three inches long, and two inches broad. The ſtalks are terminated by a looſe corymbus of purple flowers, which appear in Auguſt and continue till October, but are not ſucceeded by ſeeds in England.

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The eighteenth ſort riſes with a ſingle, upright, green ſtalk, about four feet high, garniſhed at each joint by four ſpear-ſhaped leaves, placed in whorls round the ſtalks; they are ſix inches long, and two inches broad in the middle, leſſening to both ends, terminating in acute points; they are rough, ſawed on their edges, and ſtand on ſhort foot-ſtalks; the ſtalk is terminated by a cloſe corymbus of purple flowers, which appear in July, and continue till September. The root is perennial, but the ſtalks decay every winter; it grows naturally in North America.

The nineteenth ſort grows naturally in Carolina; this hath a creeping root, which ſpreads and multiplies very faſt. The ſtalks riſe about two feet high; they are garniſhed with oval heart-ſhaped leaves, which have foot-ſtalks, and are ſawed on their edges. The flowers are produced at the top of the ſtalks in a ſort of corymbus; they are of a fine blue colour, but the roots ſpread ſo much as to cauſe barrenneſs of flowers after the firſt year.

All theſe ſorts may be propagated by ſeeds; ſeveral of them ripen their ſeeds in England; theſe ſhould be ſown in autumn as ſoon as they are ripe, for then the plants will come up the following ſpring; but if they are kept out of the ground till ſpring, the plants will not come up till the year after; and thoſe ſeeds which are procured from America ſhould be ſown as ſoon as they arrive, for though they may not grow the firſt year, yet there will be a greater certainty of their ſucceeding, than when they are kept longer out of the ground.

The ſecond, third, fifth, ſeventh, eighth, twelfth, thirteenth, ſeventeenth, eighteenth, and nineteenth ſorts are hardy plants, ſo the ſeeds of theſe may be ſown in the full ground, but there muſt be care taken in the ſowing to keep the ſorts ſeparate; for as the ſeeds of theſe plants have a light down adhering to them, they are eaſily diſplaced by the leaſt wind; ſo that the beſt way will be to ſow them in drills, but theſe ſhould be but ſhallow, for if the ſeeds are buried too deep they will not grow. The bed in which theſe are ſown ſhould not be too much expoſed to the ſun, but rather have an eaſt aſpect, where the morning ſun only reaches it; but where it is more expoſed, it ſhould be ſhaded with mats in the heat of the day, and the ground ſhould be kept pretty moiſt; for as theſe plants generally grow in moiſt ſhady ſituations in their native countries, they will ſucceed better when they have a ſoil and ſituation ſomewhat like that; though as we want their heat in ſummer, the plants will thrive here when expoſed to the ſun, provided they have a moiſt ſoil, or are ſupplied with water in dry weather.

When the young plants come up, they muſt be kept clean from weeds; and where they are too cloſe, ſome of them ſhould be drawn out, to give room for the others to grow; and if theſe are wanted, they may be planted in another bed, where, if they are ſhaded and watered, they will ſoon take root; after which they will require no farther care but to keep them clean from weeds till the following autumn, when they may be tranſplanted to the places where they are to remain. As the roots of theſe plants ſpread out to a conſiderable diſtance, they ſhould not be allowed leſs than three feet from any other plants, and ſome of the largeſt growing ſhould be allowed four feet. If the ſoil in which they are planted is a ſoft gentle loam, they will thrive much better, and flower ſtronger than in light dry ground; in which, if they are not duly watered in dry ſummers, their leaves will ſhrink, and their ſtalks will not grow to half their uſual height.

All theſe ſorts have perennial roots, by which they may be propagated; for as ſome of them do not perfect their ſeeds in England, ſo that is the only way of increaſing the plants here; ſome of the ſorts have creeping roots, ſending out offſets in great plenty, ſo theſe are eaſily propagated; and the others may be taken up, or the heads taken off from them every other year, in doing of which there ſhould be care

taken not to cut or injure the old plants too much, which would cauſe them to flower weak the following year. The beſt time to remove theſe plants is in autumn, as ſoon as they have done growing, that they may get freſh roots before the froſt comes on; but if that ſhould happen ſoon after their removal, if the ſurface of the ground is covered with tan, or dried leaves, to keep out the froſt, it will effectually ſecure them; and if this is done to the old plants in very ſevere winters, it will always preſerve them; but the nineteenth ſort is the only one which I have known killed by froſt: however, it may not be amiſs to practiſe this on the young ſeedling plants, which have not ſo good roots, nor are ſo well eſtabliſhed in the ground; the future culture will be only to dig the ground about them every ſpring, and keep them clean.

The fourth ſort ſends out many weak twining ſtalks, which require ſupport; ſo there ſhould be ſome ſtakes fixed down by their roots in the ſpring when they begin to ſhoot, to which the young ſtalks ſhould be led and faſtened, and afterward they will naturally twine round them and riſe four or five feet high if they are ſupplied with water, and in warm ſeaſons they will produce plenty of white flowers in Auguſt. This ſort is ſometimes killed in very ſevere winters, if they are not covered; but if, when the ſtalks decay in the autumn, the ground about them is covered with ſome old tanners bark, it will effectually ſecure the roots. This ſort multiplies very faſt by its creeping roots, which may be parted every other year.

The ſixth and ſixteenth ſorts have twining ſlender ſtalks, which require to be ſupported in the like manner; but theſe are natives of warm countries, ſo they will not thrive in England, unleſs they are placed in a warm ſtove; therefore they ſhould be planted in pots and plunged into the tan-bed in the ſtove, where, if they are ſupplied with wet in hot weather, they will thrive and produce flowers. The ſixth ſort hath ſhrubby ſtalks, and does not propagate by the root, ſo there ſhould be layers made of the young branches, which will put out roots if they are properly ſupplied with water; but the ſixteenth ſort may be propagated by parting the roots, in the ſame manner as the fourth ſort.

The ninth and fifteenth ſorts have perennial roots, but their ſtalks decay every winter. Theſe are tender plants, ſo ſhould be planted in pots, and kept conſtantly plunged in the tan-bed in the ſtove, where they will thrive and flower. Theſe may be propagated by cutting off ſome of their young ſhoots about the middle of June, when they have ſtrength, and planted into pots filled with light earth, and plunged into a moderate hot-bed, where, if they are ſhaded from the ſun, and gently watered as they may require it, they will put out roots in ſix weeks, and may then be tranſplanted into ſeparate pots, and treated as the old plants.

The tenth, eleventh, and fourteenth ſorts have ſhrubby ſtalks, which are perennial. Theſe are natives of warm countries, ſo will not thrive in England out of a ſtove; therefore they ſhould be planted in pots and kept plunged in the tan-bed of the ſtove, and treated as the former ſorts. Theſe will ſometimes take root from cuttings, but not very freely, ſo that the beſt way is from ſeeds when they can be procured. When the ſeeds of theſe tender ſorts can be had from their native countries, the plants raiſed that way are much preferable to thoſe which are obtained by any other method, and will flower much ſtronger, therefore ſhould be preferred; but as theſe ſeeds ſeldom grow the firſt year, few perſons have patience enough to wait for the plants coming up. When any of theſe ſeeds are brought over, they ſhould be ſown as ſoon as they arrive in pots, that they may be removed at any time; the pots ſhould be plunged into a moderate hot-bed, and the earth kept tolerably moiſt; the glaſſes ſhould alſo be ſhaded in the heat of the day, to prevent the earth from drying; in this hot-bed the pots may remain till autumn, when, if the plants are not up, they ſhould be plunged between

the plants in the bark-ſtove, and in the ſpring removed to a gentle hot-bed, which will bring up the plants ſoon after. When theſe are fit to remove they ſhould be planted in ſeparate ſmall pots, and plunged into the hot-bed again, ſhading them from the ſun till they have taken new root; then they ſhould have a large ſhare of free air admitted to them in warm weather, and frequently refreſhed with water.

In the winter theſe plants ſhould be more ſparingly watered, eſpecially thoſe ſorts whoſe ſtalks decay; and in the ſummer they ſhould have a large ſhare of free air admitted to them, with which management they will thrive and flower.

EUPHORBIA. Lin. Gen. Plant. 536. Euphorbium. Boer. Ind. alt. 1. 258. Tithymalus. Tourn. Inſt. R. H. 85. tab. 18. The Burning Thorny Plant.

This plant was named Euphorbia by King Juba, the father of Ptolemy, who governed both the Mauritanias; whoſe phyſician was named Euphorbus, and his brother Antonius Muſa is ſaid to have healed Auguſtus with this plant.

The CHARACTERS are,

The flower hath a permanent empalement of one leaf, which is ſwelling, rough, and divided into five parts at the brim. The flower hath four or five thick truncated petals, and twelve or more ſtamina which are inſerted in the receptacle; they are longer than the petals, and are terminated by globular ſummits. In the center is ſituated a three-cornered germen, ſupporting three bifid ſtyles, crowned by obtuſe ſtigmas. The germen afterward becomes a roundiſh capſule with three cells, each containing one roundiſh ſeed.

This genus of plants is ranged in the third ſection of Linnæus's eleventh claſs, which includes the plants whoſe flowers have twelve ſtamina and three ſtyles. To this genus he has added the Tithymalus and Tithymaloides of Tournefort and others. The difference between the Euphorbium and Tithymalus, conſiſts more in their outward form, than in the characters of either flower or fruit, ſo may be properly enough joined together; but the flower of Tithymaloides being very different in its form, ſhould be ſeparated from them, therefore I ſhall place them under the title of Tithymalus; and as the number of Tithymali is very great, many of which are common weeds, I ſhall ſelect only the more rare or uſeful kinds to enumerate here.

The SPECIES are,

1. EUPHORBIA (*Antiquorum*) aculeata triangularis ſubnuda articulata, ramis patentibus. Lin. Hort. Cliff. 196. *Euphorbia with triangular jointed ſtalks which are naked, and have ſpines and ſpreading branches.* Euphorbium verum antiquorum. Hort. Amſt. 1. p. 23. *Prickly triangular-pointed Euphorbia, with ſpreading branches, commonly called the true Euphorbium of the ancients.*
2. EUPHORBIA (*Canarienſis*) aculeata nuda ſubquadangularis, aculeis geminatis. Hort. Cliff. 196. *Euphorbia with naked ſtalks, which have four angles and double ſpines.* Euphorbium tetragonum & pentagonum ſpinoſum Canarinum. Boerh. Ind. alt. 1. 258. *Canary Euphorbium with four or five angles which have ſpines.*
3. EUPHORBIA (*Trigonum*) aculeata nuda triangularis articulata, ramis erectis. *Thorny-jointed triangular Euphorbia with upright naked branches.* Euphorbium trigonum & tetragonum ſpinoſum, ramis compreſſis. D'Iſnard. Act. Par. 1720. *Prickly Euphorbium having three and four angles with compreſſed branches.*
4. EUPHORBIA (*Officinarum*) aculeata nuda multangularis, aculeis geminatis. Lin. Hort. Cliff. 196. *Thorny Euphorbia having many angles and ſpines growing by pairs.* Euphorbium cerei effigie caulibus craſſioribus, ſpinis validioribus armatum. Hort. Amſt. 1. p. 21. *Torch-ſhaped Euphorbium, with thick ſtalks armed with ſtrong ſpines.*
5. EUPHORBIA (*Neriifolia*) aculeata ſeminuda, angulis obliquè tuberculatis. Lin. Hort. Cliff. 196. *Thorny half-naked Euphorbia with oblique tubercular angles, commonly called the Oleander-leaved Euphorbium.* Euphorbium anguloſum, foliis nerii latioribus. Boerh. Ind. alt. 1. 258. *Angular Euphorbium, with broad Oleander leaves.*
6. EUPHORBIA (*Heptagona*) aculeata nuda, ſeptem-angularis, ſpinis ſolitariis ſubulatis floriferis. Lin. Hort. Cliff. 196. *Naked ſeptangular thorny Euphorbia, with ſingle awl-ſhaped ſpines, producing flowers at their extremities.* Euphorbium heptagonum, ſpinis longiſſimis in apice fructiferis. Boerh. Ind. alt. 1. 258. *Euphorbium with ſeven angles and very long ſpines, bearing fruit at their tops.*
7. EUPHORBIA (*Caput Meduſæ*) inermis tuberculis imbricatis, foliolo lineari inſtructis. Lin. Hort. Cliff. 197. *Euphorbia without thorns, cloſely covered with tubercles lying over each other like tiles, and narrow leaves, commonly called Meduſa's Head.* Euphorbium Afrum, caule craſſo ſquamoſo, ramis in capitis Meduſæ ſpeciem cincto. Boerh. Ind. alt. 258. *African Euphorbium with a thick ſcaly ſtalk, and branches diſpoſed like Meduſa's head.*
8. EUPHORBIA (*Mamillaris*) aculeata nuda, angulis tuberoſis, ſpinis interſtinctis. Lin. Sp. Plant. 451. *Naked prickly Euphorbia, with tuberous angles having ſpines growing between them.* Euphorbium polygonum aculeis longioribus ex tuberculorum internodiis prodeuntibus. D'Iſnard. Act. Par. 1720. *Euphorbium with many angles, and long ſpines growing out from between the knots.*
9. EUPHORBIA (*Cereiformis*) aculeata nuda, multangularis, ſpinis ſolitariis ſubulatis. Prod. Leyd. 195. *Naked thorny Euphorbia with many angles, and ſingle awl-ſhaped ſpines.* Euphorbium cerei effigie, caulibus gracilioribus. Boerh. Ind. alt. 1. 258. *Euphorbium with the appearance of Torch Thiſtle, and a ſlender ſtalk.*
10. EUPHORBIA (*Fructus Pini*) inermis imbricata tuberculis foliolo lineari inſtructis. Hort. Cliff. 197. *Imbricated Euphorbia without ſpines, having tubercles furniſhed with very narrow leaves.* Euphorbium Afrum, facie fructûs pini. Boerh. Ind. alt. 1. 258. *African Euphorbium with the appearance of Pine fruit, commonly called Little Meduſa's Head.*
11. EUPHORBIA (*Patula*) inermis, ramis patulis ſimplicibus teretibus, foliolis linearibus inſtructis. *Euphorbia without ſpines, having ſingle ſpreading branches which are taper, terminated with very narrow leaves.*
12. EUPHORBIA (*Procumbens*) inermis ramis teretibus procumbentibus tuberculis quadragonis. *Euphorbia without ſpines, having trailing branches with quadrangular tubercles.*
13. EUPHORBIA (*Inermis*) inermis, ramis plurimis procumbentibus, ſquamoſis, foliolis deciduis. *Euphorbia without ſpines, having many trailing branches which are ſcaly, and deciduous leaves.*
14. EUPHORBIA (*Tiruaculii*) inermis fruticoſa ſubnuda filiformis erecta, ramis patulis determinatè confertis. Lin. Hort. Cliff. 197. *Shrubby erect Euphorbia without ſpines, and ſlender ſpreading branches terminating in cluſters, commonly called Indian-tree Spurge.* Tithymalus Indicus fruteſcens. Hort. Amſt. 1. p. 27. *Indian ſhrubby Spurge.*
15. EUPHORBIA (*Viminalis*) inermis fruticoſa nuda filiformis volubilis, cicatricibus oppoſitis. Hort. Cliff. 197. *Shrubby naked Euphorbia without ſpines, and ſlender twining branches, commonly called Indian Climbing Spurge.* Tithymalus Indicus vimineus penitus aphyllos. *Indian Spurge with ſlender branches, entirely without leaves.*
16. EUPHORBIA (*Mauritanica*) inermis fruticoſa ſeminuda filiformis flaccida, foliis alternis. Lin. Hort. Cliff. 197. *Naked ſhrubby Euphorbia without ſpines, taper flaccid branches, and leaves placed alternately.* Tithymalus aphyllus Mauritania. Hort. Elth. 384. *Mauritanian Spurge without leaves.*
17. EUPHORBIA (*Cotinifolia*) foliis oppoſitis ſubcordatis petiolatis emarginatis integerrimis, caule fruticoſo. Lin. Sp. Plant. 453. *Euphorbia with heart-ſhaped leaves placed oppoſite upon foot-ſtalks, which are indented at the top, entire, and a ſhrubby ſtalk.* Tithymalus arboreus Americanus cotini folio. Hort. Amſt. 1. p. 29. *Tree American Spurge with a Venice Sumach leaf.*
18. EUPHORBIA (*Lathyris*) umbellâ quadrifidâ, dichotomâ, foliis oppoſitis integerrimis. Lin. Sp. Plant. 457.

457. *Euphorbia with a quadrifid umbel, a forked ſtalk, and entire leaves placed oppoſite.* Tithymalus latifolius Cataputia dictus. H. L. *Broad-leaved Spurge, called Cataputia.*

19. EUPHORBIA (*Myrſinites*) umbellâ ſuboctifidâ, bifida, involucellis ſubovatis, foliis ſpathulatio patentibus carnoſis mucronatis margine ſcabris. Lin. Sp. Plant. 461. *Euphorbia with an umbel divided into eight points, whoſe ſmall involucrums are oval, and ſpreading fleſhy-pointed leaves ſhaped like a ſpatula, having rough borders.* Tithymalus myrſinites latifolius. C. B. P. 296. *Broad-leaved Myrtle Spurge.*

20. EUPHORBIA (*Dendroides*) umbellâ multifidâ, dichotomâ, involucellis ſubcordatis, primariis triphyllis, caule arboreo. Lin. Sp. Plant. 462. *Euphorbia with a multifid forked umbel, heart-ſhaped ſmall involucrums, the firſt three-leaved, and a tree-like ſtalk.* Tithymalus myrtifolius arboreus. C. B. P. 290. *Myrtle-leaved Tree Spurge.*

21. EUPHORBIA (*Amygdaloides*) umbellâ multifidâ, dichotomâ, involucellis perfoliatis emarginatis, orbiculatis foliis obtuſis. Lin. Sp. Plant. 662. *Euphorbia with a multifid umbel divided by pairs, orbicular perfoliate involucrums, and obtuſe leaves.* Tithymalus characias amygdaloides. C. B. P. 290. *Wood Spurge.*

22. EUPHORBIA (*Paluſtris*) umbellâ multifidâ, ſubtrifidâ, bifidâ, involucellis ovatis, foliis lanceolatis, ramis ſterilibus. Lin. Sp. Plant. 462. *Euphorbia with a multifid umbel, which is ſubtrifid and bifid, the ſmall involucrums oval, ſpear-ſhaped leaves, and ſteril branches.* Tithymalus paluſtris fruticoſus. C. B. P. 292. *Shrubby Marſh Spurge.*

23. EUPHORBIA (*Orientalis*) umbellâ quinquefidâ, quadrifidâ, dichotomâ, involucellis ſubrotundis acutis, foliis lanceolatis. Lin. Sp. Plant. 460. *Euphorbia with a quinquefid and quadrifid forked umbel, a pointed roundiſh involucrum, and ſpear-ſhaped leaves.* Tithymalus Orientalis, ſalicis folio, caule purpureo, flore magno. Tourn. Cor. 2. *Eaſtern Spurge with a Willow leaf, a purple ſtalk, and large flower.*

24. EUPHORBIA (*Characias*) umbellâ quinquefidâ, trifidâ dichotomâ, involucellis ovatis, foliis lanceolatis, capſulis lanatis. Lin. Sp. Plant. 460. *Euphorbia with a quinquefid trifid umbel, dividing by pairs, an oval involucrum, ſpear-ſhaped leaves and woolly capſules.* Tithymalus arboreus, caule corallino, folio Hyperici, pericarpio barbato. Boerh. Ind. alt. 1. p. 256. *Tree Spurge with a red ſtalk, a St. John's Wort leaf, and bearded capſule.*

25. EUPHORBIA (*Hiberna*) umbellâ ſextifidâ, dichotomâ, involucellis ovalibus, foliis integerrimis, ramis nullis capſulis verrucoſis. Lin. Sp. Plant. 462. *Euphorbia with a ſix-pointed forked umbel, oval involucrums, entire leaves, no branches, and warted capſules.* Tithymalus Hibernicus Machingboy dictus. Mer. Pin. *Iriſh Spurge, called Machingboy.*

26. EUPHORBIA (*Apios*) umbellâ quinquefidâ, bifidâ, involucellis obcordatis. Lin. Sp. Plant. 457. *Euphorbia with a quinquefid bifid umbel, and heart-ſhaped involucrums.* Tithymalus tuberosâ pyriformi radice. C. B. P. 292. *Spurge with a tuberous Pear-ſhaped root.*

27. EUPHORBIA (*Aleppica*) umbellâ quinquefidâ, dichotomâ, involucellis ovato-lanceolatis mucronatis, foliis inferioribus ſetaceis. Lin. Sp. Plant. 458. *Euphorbia with a quinquefid forked umbel, oval ſpear-ſhaped involucrums which are pointed, and the lower leaves briſtly.* Tithymalus Cypariſſius. Alp. Exot. 65. *Cypreſs Spurge.*

28. EUPHORBIA (*Cretica*) umbellâ multifidâ, bifidâ, involucellis orbiculatis, foliis lineari-lanceolatis villoſis. *Euphorbia with a multifid bifid umbel, orbicular involucrums, and narrow, ſpear-ſhaped, hairy leaves.* Tithymalus Creticus characias, anguſtifolius, villoſus & incanus. Tourn. Cor. 1. *Cretan Wood Spurge, with narrow, hairy, and hoary leaves.*

29. EUPHORBIA (*Sylvatica*) umbellâ multifidâ, dichotomâ, involucellis perfoliatis, ſubcordatis, foliis lanceolatis integerrimis. Lin. Sp. Plant. 463. *Euphorbia with a multifid forked umbel, heart-ſhaped perfoliate involucrums, and entire ſpear-ſhaped leaves.* Tithymalus ſylvaticus lunato flore. C. B. P. 290. *Wood-Spurge with a moon-ſhaped flower.*

30. EUPHORBIA (*Heterophylla*) inermis foliis ſerratis petiolatis difformibus ovatis lanceolatis panduriformibus. Lin. Sp. Plant. 453. *Euphorbia without ſpines, having ſawed leaves with foot-ſtalks which are deformed, oval, ſpear-ſhaped, and like a fiddle.* Tithymalus Curaſſavicus, ſalicis & atriplicis foliis variis, caulibus viridantibus. Pluk. Alm. 396. *Spurge from Curaſſao, with variable leaves like Willow and Orach, and a green ſtalk.*

31. EUPHORBIA (*Hypericifolia*) dichotomâ, foliis ſerratis ovali-oblongis glabris, corymbis terminalibus, ramis divaricatis. Lin. Sp. Plant. 454. *Forked Euphorbia with oblong, oval, ſmooth, ſawed leaves, and divaricated branches terminated by umbels.* Tithymalus erectus acris, parietariæ foliis glabris, floribus ad caulim nodos conglomeratis. Sloan. Cat. Jam. 82. *Upright acrid Spurge, with ſmooth Pellitory leaves, and flowers growing in cluſters from the joints of the ſtalk.*

32. EUPHORBIA (*Ocymoides*) inermis, herbacea, ramoſa, foliis, ſubcordatis integerrimis petiolatis floribus ſolitariis. Lin. Sp. Plant. 453. *Branching herbaceous Euphorbia without ſpines, having entire heart-ſhaped leaves with foot-ſtalks, and ſingle flowers.* Tithymalus Americanus, erectus, annuus, ramoſiſſimus ocymi caryophyllati foliis. Houſt. MSS. *Upright, annual, branching Spurge of America, with leaves like ſmall Baſil.*

The firſt ſort has been generally taken for the true Euphorbium of the ancients, and as ſuch hath been directed for medicinal uſe; but it is from the ſecond ſort, that the drug now imported under that title in England is taken. Dr. Linnæus ſuppoſes the fourth to be the ſort which ſhould be uſed, though as they are all nearly of the ſame quality, it may be indifferent which of them that drug is taken from, which is the inſpiſſated juice of the plant.

The firſt ſort hath a triangular, compreſſed, ſucculent ſtalk, which is jointed, and riſes to the height of eight or ten feet, ſending out many irregular twiſting branches, which are for the moſt part three-cornered, but have ſometimes only two, and at others four angles; they are compreſſed, ſucculent, and ſpread out on every ſide the ſtalk; theſe have at the extremity of the branches a few ſhort roundiſh leaves, which ſoon fall off; and near theſe come out now and then a few flowers, which have five thick whitiſh petals, with a large three-cornered germen in the center; theſe ſoon drop off without having any ſeeds. It grows naturally in India, from whence the plants were brought to the gardens in Holland, and have ſince been communicated to moſt of the curious gardens in Europe.

The ſecond ſort grows naturally in the Canary Iſlands, from whence I have been credibly informed, the Euphorbium which is imported in England, is now brought, and is the inſpiſſated juice of this plant. In its native country this grows to the height of twenty feet or more, but in England it is rarely ſeen more than ſix or ſeven; nor is it of any advantage to have them ſo tall here, becauſe they ſend out many branches which are large and ſucculent, ſo render the plants too heavy to be eaſily removed. This hath a very thick, green, ſucculent ſtalk, which has four or five large angles or corners, cloſely armed with black crooked ſpines, which come out by pairs at every indenture: the ſtalks ſend out from every ſide large ſucculent branches of the ſame form, which extend to the diſtance of two or three feet, then turn their ends upwards, ſo that when the plants are well grown, they have ſome reſemblance to a branched chandelier; theſe have no leaves, but are cloſely armed with black ſpines like the ſtalks; at the end of the branches come out the flowers, which are ſhaped like thoſe of the firſt ſort.

The third ſort hath a naked three-cornered ſtalk which is compreſſed, ſending out a great number of branches which grow erect, and join up to the main ſtalk; theſe are generally three-cornered, but ſome vary to four; they are jointed and armed with ſhort crooked ſpines, but have no leaves, nor do the

plants produce flowers here. This grows naturally in India.

The fourth ſort puts out many ſtalks juſt above the ſurface of the ground, which are thick, ſucculent, and roundiſh, having eight or ten angles while they are young, but as they grow old they loſe their angles and become round; the branches grow diſtorted and irregular, firſt horizontal, and afterward turn upward; they are armed with ſmall crooked ſpines on their angles, and on the upper part of the branches come out the flowers, which are ſmall, and of a greeniſh white, ſhaped like thoſe of the ſecond ſort. This grows naturally in India.

The fifth ſort grows naturally in India; this riſes with a ſtrong upright ſtalk five or ſix feet high, which hath irregular angles, and protuberances which are oblique to the angles; the lower part of the ſtalk is naked, the upper part is branching, and the branches are armed with crooked ſpines; at every protuberance, and at the top, they are garniſhed with oblong leaves of a lucid green, which are very ſmooth, entire, and rounded at their ends; theſe fall off, and the plants remain naked for ſome months, and then the flowers come out, which ſit cloſe to the branches, and are of a greeniſh white colour; the leaves come out in the autumn, and fall off in the ſpring.

The ſixth ſort riſes with a roundiſh, upright, ſucculent ſtalk about three feet high, putting out ſeveral branches on the ſide of the ſame form; theſe have ſeven angles or furrows, which are armed with long, ſingle, black thorns; at the end of which come out ſmall flowers, of the ſame form with thoſe of the other ſorts, and are ſometimes ſucceeded by ſmall fruit.

The ſeventh ſort hath thick, roundiſh, ſucculent ſtalks, which are ſcaly; theſe ſend out many branches from their ſides of the ſame form, which are twiſted, and run one over another, ſo as to appear like a parcel of ſerpents coming out from the ſtalks, from whence it had the appellation of Meduſa's Head. The ends of the branches are garniſhed with narrow, thick, ſucculent leaves, which drop off, and round the upper part of the branches the flowers come out; theſe are white, and of the ſame form with thoſe of the other ſpecies, but larger, and are frequently ſucceeded by round ſmooth capſules with three cells, each including a ſingle roundiſh ſeed.

The eighth ſort hath roundiſh ſtalks, which ſwell out like a belly in the middle, and have knobbed angles, between which come out long ſpines which are ſtrait; theſe ſtalks riſe two feet high, and put out a few branches on their ſide of the ſame form; the flowers are produced at the end of the branches, ſitting cloſe upon the angles; they are ſmall, of a yellowiſh green colour, and ſhaped like thoſe of the other ſpecies.

The ninth ſort hath ſtalks and branches very like thoſe of the fourth, but much ſlenderer; the ſpines of this are ſingle, and thoſe of the other double; and the ends of the branches are cloſely garniſhed with flowers on every angle, in which it differs from the fourth ſort.

The tenth ſort hath a thick ſhort ſtalk, which ſeldom riſes more than eight or ten inches high, from which come out a great number of trailing branches which are ſlender, and grow about a foot in length; theſe intermix with each other like thoſe of the ſeventh ſort, but they are much ſmaller, and do not grow near ſo long, but have the ſame appearance, from whence it is called Little Meduſa's Head: the ends of theſe branches are beſet with narrow leaves, between which the flowers come out, which are white, and ſhaped like thoſe of the other ſpecies.

The eleventh ſort riſes with a taper ſtalk ſix or ſeven inches high, ſending out from the top a few taper branches, which ſpread out on every ſide; theſe are not ſcaly, like thoſe of the laſt ſort, but taper, and garniſhed at their ends with ſeveral ſmall narrow leaves which drop off. This ſort hath not yet flowered here, having been but a ſhort time in England.

The twelfth ſort hath a ſhort thick ſtalk, which never riſes three inches high, ſo that the branches ſpread on the ſurface of the ground; theſe ſeldom grow more than ſix inches long, and their ſcales ſwell into a ſort of protuberances which are ſquare; they have no leaves, and very rarely produce flowers in England, but has been long an inhabitant in the gardens.

The thirteenth ſort is very like the ſeventh, but the ſtalks never riſe more than a foot or fifteen inches high, ſo that the branches ſpread out near the ground; theſe are alſo much ſhorter than thoſe of the ſeventh, but have the ſame appearance, and are garniſhed with narrow leaves at their end, which fall off as the branches are extended in length: this produces a great number of ſmall white flowers at the end of the branches, which are ſhaped like thoſe of the other ſpecies, and are frequently ſucceeded by round ſmooth capſules with three cells, including one or two roundiſh ſeeds which ripen here.

Theſe ſorts have been by moſt of the modern botaniſts ranged under the title of Euphorbium, and have been diſtinguiſhed from the Tithymali, more from the ſtructure and outward appearance of the plants, than any real difference in their characters, as hath been before obſerved; but as the number of ſpecies of thoſe commonly called Spurge was very great, ſo many of the writers were willing to ſeparate the Euphorbia from that genus, to leſſen the number of ſpecies.

Theſe plants are preſerved in many curious gardens, more for the oddneſs of their ſtructure, than any real beauty; but being ſo extremely different in their form, from almoſt any plants of European production, many curious perſons have been induced to preſerve the ſeveral ſorts in their gardens.

They are all of them full of a milky acrid juice, which flows out on their being wounded in any part; this juice will bliſter the fleſh, if it happen to lie upon any tender part for a ſhort time, and will burn linen almoſt as bad as aqua fortis, therefore the plants ſhould be handled with great caution; nor ſhould the ends of their branches be ever bruiſed or injured; for if they are, it frequently occaſions their rotting down to the next joint, and ſometimes will deſtroy the whole plant, if thoſe injured branches are not cut off in time; ſo that whenever the branches appear to have been injured, the ſooner they are cut from the plants, the leſs danger there will be of their ſuffering from it; nor ſhould any of the branches be cut between the joints, for the ſame reaſon.

Moſt of theſe plants were firſt brought to Europe by the Dutch, who have been very curious to introduce great numbers of plants from India, and alſo from the Cape of Good Hope: from the latter there hath been a very great variety of curious plants of late years brought to Europe, many of which produce very elegant flowers, and are the greateſt ornaments of the conſervatory in the winter and ſpring ſeaſons. Theſe have been brought over in ſeeds, but the different kinds of Euphorbia came over moſt of them in plants or cuttings; for theſe may be eaſily tranſported to any diſtance, if either of them are put up in boxes, with any ſoft dry package, to prevent their being bruiſed, or their ſpines from wounding each other, and kept from moiſture and cold; with this care they may be kept ſix months out of the ground, and if carefully planted will take root, and thrive as well as if they had been newly taken from the old plants, or out of the ground but a ſhort time; which is a much more expeditious method of obtaining the plants than from ſeeds, when they can be procured.

The greateſt part of theſe ſucculent plants grow naturally upon barren rocky places, or in dry ſandy ſoils, where few other plants will thrive; therefore they ſhould never be planted in rich or loamy earth here, nor ſuffered to receive much wet, which will cauſe them to rot. The beſt mixture of earth for theſe plants is about a fourth part of ſcreened lime-rubbiſh, a fourth part of ſea-ſand, and half of light freſh earth from a common; theſe ſhould be mixed well

well together, and frequently turned over before it it uſed, that the parts may be incorporated, and the compoſt ſweetened by being expoſed to the air. If this mixture is prepared a year before it is wanted, it will be the better, that it may have the benefit of the winter's froſt and the ſummer's heat to mellow it; and the oftener it is turned over, and the ſmaller the heaps are in which it is laid, the air will penetrate it better, and render it more fit for uſe.

Theſe ſorts are eaſily propagated by cuttings, which ſhould be taken from the old plants in June; theſe muſt be cut at a joint, otherwiſe they will rot. When theſe cuttings are taken off, the milky juice of the old plants will flow out in plenty; therefore there ſhould be ſome dry earth or ſand applied upon the wounded part, which will harden and ſtop the ſap; and the wounded part of the cuttings ſhould alſo be rubbed in ſand, or dry earth, for the ſame purpoſe; then the cuttings ſhould be laid in a dry part of the ſtove, for ten days or a fortnight; and ſome of thoſe whoſe branches are large and very ſucculent, may lie three weeks or more before they are planted, that their wounds may be healed and hardened, otherwiſe they will rot. When the cuttings are planted, they ſhould be each put into a ſmall halfpenny pot, laying ſtones or rubbiſh in the bottom, and filling the pots with the mixture before directed; then plunge the pots into a moderate hot-bed, and if the weather is very hot, the glaſſes of the hot-bed ſhould be ſhaded in the middle of the day, and the cuttings ſhould be gently watered once or twice a week, according as the earth may dry: in about ſix weeks or two months the cuttings will have put out roots, ſo if the bed is not very warm, the plants may continue there, provided they have free air admitted to them every day, otherwiſe it will be better to remove them into the ſtove, where they may be hardened before the winter; for if they are too much drawn in ſummer, they are very apt to decay in winter, unleſs they are very carefully managed. During the ſummer ſeaſon, theſe plants ſhould be gently watered two or three times a week, according to the warmth of the ſeaſon; but in winter they muſt not be watered oftener than once a week, and it ſhould be given more ſparingly at that ſeaſon, eſpecially if the ſtove is not warm: the firſt ſort will require more warmth in the winter than any of the other, as alſo leſs water at that ſeaſon. This, if well managed, will grow ſeven or eight feet high; but the plants muſt conſtantly remain in the ſtove, giving them a large ſhare of air in warm weather, and in winter the ſtove ſhould be kept in a temperate degree of warmth.

The ſixth ſort is at preſent the moſt rare in England: the plants of this ſort, which have been procured from Holland, have been moſt of them deſtroyed by placing them in ſtoves, where, by the heat, they have in one day turned black, and rotted immediately after. This ſort will thrive well if placed in a dry airy glaſs-caſe with Ficoides, and other ſucculent plants in the winter, where they may have free air in mild weather, and be protected from froſt; in ſummer the plants of this ſort may be expoſed in the open air, in a warm ſituation, but ſhould be ſcreened from much wet: with this treatment, the plants will thrive much better than when they are more tenderly nurſed.

The ſeventh, eighth, tenth, eleventh, twelfth, and thirteenth ſorts, are alſo pretty hardy, ſo will live in a good glaſs-caſe in winter without fire, provided the froſt is kept entirely out, and in ſummer they may be placed abroad in a warm ſituation: as theſe are very ſucculent plants, they ſhould not have too much wet; therefore, if the ſummer ſhould prove very moiſt, it will be very proper to place theſe plants under ſome ſhelter, where they may enjoy the free air, and be ſcreened from the rain, otherwiſe by receiving too much wet in ſummer they will rot in winter.

The ſeventh ſort will require to be ſupported, otherwiſe the weight of the branches will draw them upon the pots; and, by training of the ſtems up to ſtakes, they will grow four or five feet high, and a great number of ſide branches will be produced; theſe, being very ſucculent and heavy, are very apt to draw down the ſtem if it hath not ſupport.

The following ſorts have been, by all the writers on botany, placed under the title of Tithymalus; but the fourteenth and fifteenth ſorts ſhould, according to their own diſtinction, have been placed in the genus of Euphorbium, becauſe they are as deſtitute of leaves as moſt of the ſpecies which they have there placed.

The fourteenth ſort riſes with a taper ſucculent ſtalk to the height of eighteen or twenty feet, ſending out many branches of the ſame form, which ſubdivide into many ſmaller; theſe are jointed but at a great diſtance: they are ſmooth, and of a deep green colour, having a few ſmall leaves at their extremities, which ſoon fall off. As the plants grow older, their ſtalks become ſtronger and leſs ſucculent, eſpecially toward the bottom, where they turn to a brown colour, and become a little woody. The branches grow diffuſed and intermix with each other, ſo form a ſort of buſh toward the top, but this doth not produce flowers here.

The fifteenth ſort ſends out a great number of ſlender taper ſtalks of a dark green colour, which are ſmooth, and twiſt about each other, or any neighbouring ſupport, whereby they will riſe to the height of ten or twelve feet, putting out ſmaller branches upward, which alſo twine and intermix with the other ſtalks; they are naked, having no leaves, nor do the plants flower in England. Theſe grow in India.

The ſixteenth ſort ſends out many taper ſucculent ſtalks from the root, which riſe about four feet high; they are ſlender and weak, ſo require ſupport to prevent their falling to the ground; theſe have a light green bark, and their lower parts are naked, but their upper parts are garniſhed with oblong leaves, which are ſmooth, entire, and placed alternate on every ſide the ſtalks: the flowers are produced in ſmall cluſters at the end of the branches, they are of a yellowiſh green colour, and are ſometimes ſucceeded by ſmooth round fruit, but the ſeeds rarely ripen in England. This ſort grows naturally on the African ſhore in the Mediterranean.

The ſeventeenth ſort grows naturally in ſome of the iſlands of the Weſt-Indies, and alſo upon the continent there. I received ſpecimens of this ſort from the iſland of Tobago, and alſo from Carthagena, where the plants were growing in plenty; the Dutch gardens were furniſhed with it from Curaſſao, where it alſo grows naturally. This hath an upright ſtalk, which riſes to the height of ſix or ſeven feet, covered with a light brown bark, and divides upward into many branches; theſe are garniſhed with roundiſh leaves, which are indented at their ends, and have foot-ſtalks: they are ſmooth and of a beautiful green, but fall away in winter, ſo that in the ſpring they are almoſt naked; the flowers come out from the end of the branches, they are yellow and ſmall, ſoon falling away without having any fruit ſucceed them here.

Theſe ſorts are propagated by cuttings, in the ſame manner as the Euphorbiums, and the plants muſt be treated in the ſame way, as hath been directed for them.

The fourteenth, fifteenth, and ſeventeenth ſorts, are tender, ſo require a ſtove; theſe muſt have the ſame treatment as the tender kinds of Euphorbiums, but the ſixteenth ſort will live in a common green-houſe in winter, and may be expoſed abroad in the ſummer.

The eighteenth ſort ſtands in the liſt of medicinal plants, but is rarely uſed in England at preſent; this is a biennial plant, which periſhes after the ſeeds are ripe. It grows naturally in Italy and the ſouth of France, and where it is allowed to ſcatter its ſeeds in a garden, becomes a weed here. This riſes with an upright ſucculent ſtalk from three to four feet high, garniſhed with oblong ſmooth leaves which are placed oppoſite, and ſit cloſe to the ſtalks; the upper part of the ſtalk divides by pairs into ſmaller forked

branches, and from the fork between theſe diviſions come out the umbels of flowers, each fork having one; that which is ſituated in the firſt diviſion being the largeſt, and thoſe in the upper the ſmalleſt. The flowers are of a greeniſh yellow colour; they appear in June and July, and the fruit follows ſoon after, which is divided into three lobes, and has three cells, each containing one roundiſh ſeed, which is caſt out at a diſtance by the elaſticity of the pods. This ſort will propagate itſelf faſt enough when it is once introduced into gardens, ſo requires no care but to keep it clean from weeds.

The nineteenth ſort grows naturally in the ſouth of France, in Spain, and Italy. This ſends out many trailing branches from the root, which grow about a foot long, lying upon the ground, which are cloſely garniſhed with thick ſucculent leaves; theſe are flat, ſhort, and pointed; they ſpread open on every ſide the branches, and are placed alternate, ſitting cloſe to the ſtalks: the flowers are produced in large umbels at the end of the branches; the involucrum of the principal umbel is compoſed of ſeveral oval-pointed leaves, but thoſe of the ſmall umbels have only two heart-ſhaped concave leaves, whoſe borders are rough; the flowers are yellow, and are ſucceeded by three ſeeds, incloſed in a roundiſh capſule with three cells. This plant will continue two or three years upon a dry warm ſoil, and will ripen ſeeds annually; which, if permitted to ſcatter, the plants will come up, and require no other care but to keep them clean from weeds.

The twentieth ſort grows naturally in Crete, and in ſeveral iſlands of the Archipelago; this riſes with an upright branching ſtem to the height of four feet; the leaves of this are oblong and pointed, and are placed alternate on the branches; the flowers come out in umbels from the fork between the branches; they are ſmall and yellow, and are rarely ſucceeded by ſeeds in England. It is eaſily propagated by cuttings during any of the ſummer months, and requires a little protection from the froſt in winter.

The twenty-firſt ſort grows naturally in the woods in many parts of England; it riſes with a ſhrubby ſtalk three feet high; the flowers are produced in umbels ſitting cloſe to the ſtalks, ſo form a long ſpike; the empalements are of a greeniſh yellow, and the petals black, ſo they make an odd appearance. It flowers in May, and the ſeeds ripen in July. If the ſeeds of this are ſown under trees in the autumn, the plants will riſe the following ſpring, and require no culture.

The twenty-ſecond ſort ſtands in the liſt of medicinal plants by the title of Eſula major, but at preſent is ſeldom uſed: this grows naturally in France and Germany upon marſhy places, where it riſes three or four feet high. It hath a perennial root, by which it may be propagated better than by ſeeds, which ſeldom grow, unleſs they are ſown ſoon after they are ripe.

The twenty-third ſort was diſcovered in the Levant, by Dr. Tournefort, who ſent the ſeeds to the royal garden at Paris; this hath a perennial root, from which ariſe many ſucculent ſtalks three feet high, covered with a purple bark, and garniſhed with oblong ſmooth leaves, ſhaped like thoſe of Willow, of a dark green colour. The upper part of the ſtalks divide, and in the fork is ſituated an umbel of flowers of a greeniſh yellow colour, which are ſucceeded by round capſules with three cells, each containing a ſingle ſeed. It flowers in June, and the ſeeds are ripe in Auguſt; this may be propagated by parting the roots, or by ſowing the ſeeds in autumn. The plant is hardy, ſo will endure the greateſt cold of this country, if it is planted in a dry ſoil.

The twenty-fourth ſort grows naturally in Sicily, and on the borders of the Mediterranean Sea; this riſes with ſeveral ſhrubby ſtalks to the height of five or ſix feet, having a red bark, and are garniſhed with oblong, ſmooth, blunt leaves, which are placed alternate. The flowers grow in ſmall umbels from the diviſion of their branches; they are yellow, and are ſucceeded by roundiſh capſules, which are rough, having three cells like the other ſpecies. This is eaſily propagated by cuttings during any of the ſummer months, and requires protection from the froſt in winter.

The twenty-fifth ſort grows naturally in Ireland, from whence the roots have been brought to England; this hath thick fibrous roots, which ſend up ſeveral ſingle unbranched ſtalks about a foot high, garniſhed with oblong leaves, placed alternate on every ſide. The flowers are produced in ſmall umbels at the top of the ſtalks; they are yellow, and are ſucceeded by rough warted capſules with three cells; it flowers in June, and the ſeeds ripen in Auguſt. This may be propagated by the roots, which ſhould be planted in a ſhady ſituation and a moiſt ſoil.

This plant was almoſt the only phyſic uſed by the native inhabitants of Ireland formerly; but ſince the uſe of mercury has been known to them, the other has been generally neglected.

The twenty-ſixth ſort grows naturally in the Levant; this hath a knobbed Pear-ſhaped root, from which ariſe two or three ſtalks about a foot and a half high, garniſhed with oblong leaves, which are hairy, placed alternate on every ſide the ſtalk. The flowers are produced in ſmall umbels from the diviſions of the ſtalk; they are ſmall, of a greeniſh yellow colour, and are ſeldom ſucceeded by ſeeds here; it may be propagated by offsets, ſent out from the main root; theſe may be taken off in autumn, and planted in a ſhady ſituation, where they will thrive better than in the full ſun.

The twenty-ſeventh ſort grows naturally at Aleppo, and in other parts of the Levant; this hath a perennial creeping root, by which it multiplies very faſt where it is once eſtabliſhed. The ſtalks of this riſe a foot and a half high; the lower leaves are narrow, ſtiff, and briſtly; but thoſe on the upper part of the ſtalk are ſhaped like the narrow-leaved Myrtle. The flowers are produced in large umbels from the diviſions of the ſtalk; they are yellow, and appear in June, but are rarely ſucceeded by ſeeds in this country. The roots of this ſhould be confined in pots; for when they are planted in the full ground, they creep about to a great diſtance.

The twenty-eighth ſort grows naturally in many parts of the Levant, and alſo in Spain and Portugal. The ſeeds of this were brought me from Scanderoon, by the late Mr. Robert Millar, who found the plants growing plentifully there; and he aſſured me, that he ſaw the inhabitants wounding of theſe plants, and collecting their milky juice, which they mixed up with the Scammony to ſend abroad.

The ſeeds of this plant were ſince ſent me from Portugal, by Robert More, Eſq; who found the plants growing there naturally, but this plant had been many years before an inhabitant in the Engliſh gardens; this riſes with a purple ſhrubby ſtalk near three feet high, which is garniſhed with narrow, ſpear-ſhaped, hairy leaves, ſet cloſely on the ſtalk alternately on every ſide; the upper part of the ſtalk is terminated by umbels of flowers, which form a ſort of ſpike. The greater umbels are multifid, but the ſmall ones are bifid. The involucrums of the flowers are yellow, and the petals of the flowers black; theſe appear in May, and are ſucceeded by ſeeds which ripen in July: the young plants which have been lately raiſed from ſeeds, are generally very fruitful, but the old ones, and thoſe raiſed by cuttings are barren; this may be propagated by ſeeds, or from cuttings, and will live abroad if planted in a dry rubbiſhy ſoil and a warm ſituation, otherwiſe they are frequently killed by ſevere froſt.

The twenty-ninth ſort grows naturally in the ſouth of France, in Spain, and Italy; this is a biennial plant, from whoſe root ariſe two or three ſtalks, which grow two or three feet high, garniſhed with ſpear-ſhaped leaves, which are entire. The umbels of flowers ariſe from the diviſion of the branches; the involucrums

are

are heart-ſhaped, and ſurround the pedicle with their baſe. The flowers are yellow, and appear in June. The ſeeds ripen in Auguſt; which, if permitted to ſcatter, the plants will come up, and require no other care but to keep them clean from weeds; this muſt have a ſhady ſituation.

The thirtieth ſort grows naturally at La Vera Cruz, from whence the late Dr. Houſtoun ſent me the ſeeds; this is an annual plant, which riſes from two to three feet high. The leaves of theſe are ſometimes narrow and entire, at other times oval, and divided in the middle, almoſt to the midrib, in ſhape of a fiddle; they alſo vary in their colour, ſome being inclinable to purple, others of a light green; they are ſawed on their edges, and ſtand upon ſhort foot-ſtalks. The flowers are produced in ſmall umbels at the end of the branches; they are of a greeniſh white, and are ſucceeded by ſmall round capſules with three cells.

The thirty-firſt ſort grows naturally in moſt of the iſlands in the Weſt-Indies; this is an annual plant, which riſes with a branching ſtalk about two feet high, garniſhed with oblong, oval, ſmooth leaves, which are ſawed on the edges. The flowers grow in ſmall umbels at the foot-ſtalks of the leaves, gathered into cloſe bunches; theſe are white, and are ſucceeded by ſmall round capſules, incloſing three ſeeds.

The ſeeds of the thirty-ſecond ſort were ſent me from La Vera Cruz, by the late Dr. Houſtoun; this is an annual plant, which riſes with an upright ſtalk about a foot high, dividing into a great number of branches, which ſpread very wide on every ſide, garniſhed with roundiſh, heart-ſhaped leaves, which are entire, ſtanding upon pretty long foot-ſtalks. The flowers come out ſingly from the diviſions of the ſtalk; they are ſmall, and of an herbaceous colour, and are ſucceeded by ſmall round capſules, containing three ſeeds.

The laſt three ſorts are annual; the ſeeds of theſe muſt be ſown upon a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted in a ſmall pot filled with light earth, and plunged into the hot-bed again, and muſt afterward be treated in the ſame manner as other tender annual plants from warm countries.

EUPHRASIA. Eyebright.

This is a medicinal plant, which grows naturally in the fields and commons in moſt parts of England, always among graſs, heath, furz, or ſome other cover, and will not grow when theſe are cleared from about it; nor will the ſeeds grow when they are ſown in a garden; for which reaſon I ſhall not trouble the reader with a deſcription, or any farther account of it, than that the herb-women ſupply the markets with it in plenty from the fields.

EXCORTICATION [excorticatio, *Lat.*] a pulling or peeling off the outward bark of trees.

EXOTICS [exotica, *Lat.*] Exotic plants are ſuch as are natives of foreign countries.

F.

FABA. Tourn. Inſt. R. H. 391. tab. 212. Vicia. Lin. Gen. Plant. 782. The Bean; in French, *Féve.*

The CHARACTERS are,

The flower hath a tubulous empalement of one leaf, which is cut into five ſegments at the brim; the three lower ſegments being long, and the two upper are very ſhort. The flower is of the butterfly kind. The ſtandard is large, oval, and indented at the end; the two ſides turn backward, after ſome time; it hath two oblong erect wings, which incloſe the keel, being much longer. The keel is ſhort, ſwelling, and cloſely covers the parts of generation; theſe are joined in one column, almoſt to the top where they are divided; the nine ſtamina are in three parts, and one ſtands ſeparate; theſe are terminated by roundiſh reclined ſummits. At the bottom is ſituated an oblong compreſſed germen, ſupporting a ſhort angular ſtyle, crowned by an obtuſe ſtigma, which is bearded on the two ſides. The germen afterward becomes a long, compreſſed, leathery pod, having one cell, filled with compreſſed kidney-ſhaped ſeeds.

Tournefort ranges this genus of plants in the ſecond ſection of his tenth claſs, which includes the herbs with a butterfly flower, whoſe pointal turns to a long pod with one cell. This is in the third ſection of Linnæus's ſeventeenth claſs, in which he places thoſe plants whoſe flowers have ten ſtamina, joined in two bodies; and he joins it to his genus of Vicia, ſo he makes only a ſpecific difference between them; but as the Bean hath a compreſſed leathery pod and kidney-ſhaped ſeeds, and the Vetch a ſwelling pod with round ſeeds, they ſhould be ſeparated.

There are ſeveral varieties of the Garden Bean, which are known and diſtinguiſhed by the gardeners, but do not eſſentially differ from each other; ſo I ſhall not enumerate them as diſtinct ſpecies, nor join theſe to the Horſe Bean, as ſome have done, who have ſuppoſed them to be but one ſpecies; for, from having cultivated them more than forty years, without finding the Garden Bean degenerate to the Horſe Bean, or the latter improving to the former, I conclude they are diſtinct ſpecies.

There is a great variety of the Garden Beans, now cultivated in the kitchen-gardens in England, which differ in ſize and ſhape; ſome of them producing their pods much earlier in the year than others, for which they are greatly eſteemed by the gardeners, whoſe profit ariſes from their early crops of moſt eſculent plants; therefore they are very careful to improve all thoſe varieties which have a tendency to be fit for the markets firſt; but as many ſorts of ſeeds, when cultivated long in the ſame land, are apt to degenerate, ſo new ſeeds ſhould be annually procured, either from abroad, or ſome diſtant ſituation, where the ſoil is of a different nature, by which change many of the varieties may be continued in perfection.

I ſhall begin with the Garden Bean, called by the botaniſts, Faba major to diſtinguiſh it from the Horſe Bean, which they have titled Faba minor ſeu Equina; and I ſhall only mention the names of each, by which they are known among the gardeners, placing them according to their time of ripening for the table.

The Mazagan Bean is the firſt and beſt ſort of early Beans at preſent known; theſe are brought from a ſettlement

clement of the Portugueſe on the coaſt of Africa, juſt without the Streights of Gibraltar; the ſeeds of this ſort are ſmaller than thoſe of the Horſe Bean; and as the Portugueſe are but ſlovenly gardeners, there is commonly a great number of bad ſeeds among them. If this ſort is ſown in October, under a warm hedge, pale, or wall, and carefully earthed up when the plants are advanced, they will be fit for the table by the middle of May. The ſtems of this ſort are very ſlender, therefore, if they are ſupported by ſtrings cloſe to the hedge, or pale, it will preſerve them from the morning froſts, which are ſometimes ſevere in the ſpring, and retard their growth; ſo by keeping them cloſe to the fence it will cauſe them to come forwarder than if this is neglected; theſe Beans bear plentifully, but they ripen nearly together, ſo that there are never more than two gatherings from the ſame plants; if the ſeeds of this ſort are ſaved two years in England, the Beans will become much larger, and not ripen ſo ſoon, which is called a degeneracy.

The next ſort is the early Portugal Bean, which appears to be the Mazagan ſort ſaved in Portugal, for it is very like thoſe which are the firſt year ſaved in England; this is the moſt common ſort uſed by the gardeners for their firſt crop, but they are not near ſo well taſted as the Mazagan; therefore when the Mazagan Bean can be procured, no perſon would plant the other.

The next is the ſmall Spaniſh Bean; this will come in ſoon after the Portugal ſort, and is rather a ſweeter Bean, therefore ſhould be preferred to it.

Then comes the broad Spaniſh, which is a little later than the other, but comes in before the common ſorts, and is a good bearer, therefore is frequently planted.

The Sandwich Bean comes ſoon after the Spaniſh, and is almoſt as large as the Windſor Bean; but, being hardier, is commonly ſown a month ſooner; this is a plentiful bearer, but not very delicate for the table.

The Toker Bean, as it is generally called, comes about the ſame time with the Sandwich, and is a great bearer; therefore is now much planted, though it is a coarſe Bean.

The white and black Bloſſom Beans are alſo by ſome perſons much eſteemed; the Beans of the former are, when boiled, almoſt as green as Peas; and being a tolerable ſweet Bean, renders it more valuable; theſe ſorts are very apt to degenerate, if their ſeeds are not ſaved with great care.

The Windſor Bean is allowed to be the beſt of all the ſorts for the table; when theſe are planted on a good ſoil, and are allowed ſufficient room, their ſeeds will be very large, and in great plenty; and when they are gathered young, are the ſweeteſt and beſt taſted of all the ſorts; but theſe ſhould be carefully ſaved, by pulling out ſuch of the plants as are not perfectly right, and afterward by ſorting out all the good from the bad Beans.

This ſort of Bean is ſeldom planted before Chriſtmas, becauſe it will not bear the froſt ſo well as many of the other ſorts; ſo it is generally planted for the great crop, to come in June and July.

All the early Beans are generally planted on warm borders under walls, pales, and hedges; and thoſe which are deſigned to come firſt, are uſually planted in a ſingle row pretty cloſe to the fence: and here I cannot help taking notice of a very bad cuſtom, which too generally prevails in gentlemens kitchen-gardens, which is that of planting Beans cloſe to the garden-walls, on the beſt aſpects, immediately before the fruit-trees, which is certainly a greater prejudice to the trees, than the value of the Beans, or any other early crop; therefore this practice ſhould be everywhere diſcouraged; for it is much better to run ſome low Reed hedges acroſs the quarters of the kitchen-garden, where early Beans and Peas may be planted, in which places they may with more conveniency be covered in ſevere froſt; and to theſe hedges they may both be cloſely faſtened, as they advance in their growth; which, if practiſed againſt the walls where good fruit-trees are planted, will greatly prejudice the trees, by overſhadowing them, and the growth of theſe legumes will draw off the nouriſhment from the roots of the trees, whereby they will be greatly weakened.

But to return to the culture of the Beans. Thoſe which are planted early in October, will come up by the beginning of November; and as ſoon as they are an inch above ground, the earth ſhould be carefully drawn up with a hoe to their ſtems; and this muſt be two or three times repeated, as the Beans advance in height; which will protect their ſtems from the froſt, and encourage their ſtrength. If the winter ſhould prove ſevere, it will be very proper to cover the Beans with Peas-haulm, Fern, or ſome other light covering, which will ſecure them from the injury of froſt; but this covering muſt be conſtantly taken off in mild weather, otherwiſe they will draw up tall and weak, and come to little; and if the ſurface of the border is covered with tanners bark, it will prevent the froſt penetrating the ground to the roots of both, and be of great ſervice to protect them from the injury which they might otherwiſe receive.

In the ſpring, when the Beans are advanced to be a foot high, they ſhould be faſtened up to the hedge with packthread or a ſmall line, ſo as to draw them as cloſe as poſſible; which will ſecure them from being injured by the morning froſts, which are often ſo ſevere in March and April, as to lay thoſe Beans flat on the ground, which are not thus guarded; at this time all ſuckers which come out from the roots ſhould be very carefully taken off; for theſe will retard the growth of the Beans, and prevent their coming early; and when the bloſſoms begin to open toward the bottom of the ſtalks, the top of the ſtems ſhould be pinched off, which will cauſe thoſe firſt pods to ſtand, and thereby bring them forward. If theſe rules are obſerved, and the ground kept clean from weeds, or other plants, there will be little danger of their failing.

But leſt this firſt crop ſhould be deſtroyed by froſt, it will be abſolutely neceſſary to plant more about three weeks after the firſt, and ſo to repeat planting more every three weeks, or a month, till February; but thoſe which are planted toward the end of November, or the beginning of December, may be planted on ſloping banks, at a ſmall diſtance from the hedges; for if the weather is mild, theſe will not appear above ground before Chriſtmas; therefore will not be in ſo much danger as the firſt and ſecond planting, eſpecially if the ſurface of the ground is covered with tan to keep the froſt out of the ground as is before directed; for the firſt planting will, by that time, be a conſiderable height: the ſame directions which are before given will be ſufficient for the management of theſe; but only it muſt be obſerved, that the larger Beans ſhould be planted at a greater diſtance than the ſmall ones; as alſo, that thoſe which are firſt planted muſt be put cloſer together, to allow for ſome miſcarrying; therefore, when a ſingle row is planted, the Beans may be put two inches aſunder, and thoſe of the third and fourth planting may be allowed three inches; and when they are planted in rows acroſs a bank, the rows ſhould be two feet and a half aſunder; but the Windſor Beans ſhould have a foot more ſpace between the rows, and the Beans in the rows ſhould be planted five or ſix inches aſunder. This diſtance may, by ſome perſons, be thought too great; but from many years experience, I can affirm, that the ſame ſpace of ground will produce a greater quantity of Beans when planted at this diſtance, than if double the quantity of ſeeds are put on it. In the management of theſe later crops of Beans, the principal care ſhould be to keep them clear from weeds, and any other plants which would draw away their nouriſhment; to keep earthing them up, and, when they are in bloſſom, to pinch off their tops; which, if ſuffered to grow, will draw the nouriſhment from the lower bloſſoms, which will prevent the pods from ſetting, and ſo only the upper parts of the ſtems will be fruitful;

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